GOVERNMENT OF PAKISTAN

Pakistan Export Strategy Engineering Goods

2023-2027

This Engineering goods sector strategy is part of the National Priority Sectors Export Strategy (NPSES) initiative which contributes to the implementation of Pakistan's Strategic Trade Policy Framework (STPF) 2020-2025.

ITC is the joint agency of the World Trade Organization and the United Nations. As part of the ITC mandate of fostering sustainable development through increased trade opportunities, the Trade Development Strategies Programme offers a suite of trade-related strategy solutions to maximize the development payoffs from trade. ITC-facilitated trade development strategies and roadmaps are oriented to the trade objectives of a country or region and can be tailored to high-level economic goals, specific development targets or particular sectors. This document was developed on the basis of the process, methodology and technical assistance of the International Trade Centre (ITC) within the framework of its Trade Development Strategy programme.

This document has been developed as part of the Revenue Mobilisation, Investment and Trade project (ReMIT) funded by the Government of the United Kingdom and implemented by ITC.

This document has been produced with the financial support of the Foreign, Commonwealth & Development Office. The contents of this document can in no way be taken to reflect the views of the Government of the United Kingdom.

The International Trade Centre

Street address: ITC, 54–56, Rue de Montbrillant, 1202 Geneva, Switzerland
Postal address: ITC, Palais des Nations, 1211 Geneva, Switzerland
Telephone: (41-22) 730 01 11
E-mail: itcreg@intracen.org
Internet: http://www.intracen.org
Layout: Jesús Alés / www.sputnix.es

International Trade Centre

UKaid from the British people

Pakistan
Export Strategy

Engineering Goods

2023-2027

Forewords

Message from the Ministry of Commerce

Increasing international trade is not only a means of boosting economic growth and the nation's welfare, but also contributing to strengthening international relations. The stabilization of economic and political affairs paves the way for reinforcing friendly relations based on mutual interests with a wide range of trade partners. Trade is thus one of the most important forms of exchange between countries and fostering this will lead to connections such as foreign investments, better employment opportunities, and scientific and technical exchanges, all of which will con¬tribute to Pakistan's growth and prosperity.

The Government of Pakistan has taken a series of initiatives to promote exports to achieve sustainable and inclusive economic growth, poverty reduction and improvement in the living standard of Pakistani people. This is also aligned with the government's vision of the Strategic Trade Policy Framework (STPF) 2020-25 for 'Pakistan to become a dynamic and efficient domestic market as well as a globally competitive export-driven economy'. In this context, the Ministry of Commerce supported the preparation of the Engineering Goods Export Strategy, a priority export sector under the STPF, which will contribute to export diversification of Pakistan. This sector export strategy has been formulated in close consultation with all the stakeholders; and the Ministry of Commerce appreciates all those involved in the process, particularly the private sector.

As a priority export product within the framework of the STPF 2020-25, Engineering Goods presents a new export avenue and an opportunity for Pakistan. The strategy encompasses trade-related factors such as ensuring export quality, greater market access and product diversification. In addition, substantial investment to expand export potential and grow foreign trade requires strategic targeting. All activities in the strategy design framework have outlined a detailed five-year plan of action to tackle issues and facilitate export procedures, and are agreed on by all the stakeholders of the Engineering Goods sector in Pakistan.

Despite challenges in the international trade scenario and the global business environment, I am confident that this initiative will serve as an action-oriented blueprint to enhance trade performance and to develop a coordinated mechanism with participation from both, the public and private sector, increasing its competitiveness in the international market.

To maintain the momentum sparked by the consultations, the Ministry of Commerce is committed to play a constructive and facilitative role, while making it our top priority to execute the activities and reforms proposed in the Plan of Action in consultations with the stakeholders. We are particularly committed to continue keeping the private sector in the driving seat for the implementation process through the Sector Specific Council (SSC) on Engineering Goods. The Government of Pakistan is fully committed to promoting export-led economic growth and would encourage all to join hands and work together in making the vision of a flourishing Engineering Goods sector a reality.

Message from Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM)

Pakistan's Strategic Trade Policy Framework (STPF) has identified engineering goods as a priority focus export sector for growth and development for the next five years. Within this, automotive manufacturing is a key subsector. As automotive manufacturing has seen a steady growth across Asia, the Islamic Republic of Pakistan has begun to grow its domestic industry capabilities steadily over time. Pakistani firms now manufacture in joint ventures with several global industry leaders, manufacture components for international supply chains in the sector, and are increasingly growing the share of automotives sold domestically as well. Helped by progressive government policies (notably the Automotive Development Policy 2016-2021 and 2021-2026), this sector has grown in prominence in the national economic landscape and has its sights set on playing a larger role in export revenues in the years ahead. As we have noted before, recent conducive policy measures towards the industry will certainly help grow industry volumes and, in the process, create more jobs, as the auto industry has a high multiplier effect. We believe our sector has the potential to be a key source for creating good jobs for the youth of Pakistan and contribute to the country's overall industrial development. We anticipate that at least 500,000 new jobs would be created in the short term.

Already, our members are exporting to key growth markets in the Asian, Middle East and North African regions and have begun to forge international buyer linkages. Through the implementation of the actions in this sector strategy, we expect to compete more effectively in the global automotive market, strengthen our presence in existing markets that we export to, and enter new growing markets as well. The rapid growth in demand in neighbouring regional markets bodes well for Pakistan's export prospects.

As this strategy has rightly identified, our industry must focus on improving the available skilled workforce, improving engineering and managerial talent, encouraging innovation and entrepreneurship, and ensuring a supply of quality raw materials. Meanwhile, we reiterate the need for a stable and predictable policy and regulatory regime, including continual addressing of tax anomalies. This strategy provides an excellent roadmap for the sector's future growth, with a focus on quality, competitiveness, innovation and export market expansion. As the global automotive sector evolves significantly in the coming years, especially with the growth of electric mobility, our sector would work on capitalizing on these new trends, while continuing to maximize potential in current segments.

The recommendations of the Engineering Goods Sector Export Strategy are a combined effort of public and private sector stakeholders to optimize strengths and overcome constraints. As the sector's apex industry stakeholders, we are committed to implementing this strategy, to make Pakistan an emerging leader in the automotive sector to meet domestic demand and cater to regional and global markets.

Abdur Razzaq Gauhar
Chairman, PAAPAM

Message from Pakistan Electric Fan Manufacturers Association (PEFMA)

As the representatives of Pakistan's electric fan sector, we were pleased to see that the Strategic Trade Policy Framework (STPF) 2020-25 has identified engineering goods as a priority focus export sector for growth and development for the next five years, and within this, electric fans manufacturing is a key subsector.

In recent periods, our industry has faced challenges with accessing affordable and quality inputs. We welcome the strategy's focus on addressing this issue, both from a border taxation (pricing) and from quality assurance point of view. We welcome recent moves to strengthen the quality regulatory framework in the country. In 2021, the federal government included electric fan standards in the compulsory certification mark scheme of Pakistan Standards and Quality Control Authority (PSQCA) and established lab testing facilities in Gujrat. This is a step in the right direction, towards further strengthening the national quality infrastructure for engineering goods in general and electric fans in particular. The strategy recognizes this need and has included actions in this regard.

Our industry, being primarily concentrated in Gujrat and Gujranwala and primarily small and medium-sized enterprises (SMEs) (approximately 150), has potential to boost industrial upgrading of these regions and enhance the availability of good manufacturing jobs. For this, improving the skilled worker availability is key, and this is recognized with a series of actions in the strategy.

While the majority of our production of ceiling and pedestal fans caters to the domestic market, Pakistani fans (mostly pedestal) are being exported to countries in the region (e.g. Bangladesh, Afghanistan and Middle Eastern countries such as Saudi Arabia, the United Arab Emirates, Yemen and Iraq, and the African continent). Our exporters have continued to conduct international market promotion initiatives in Africa and the Middle East, even during the COVID-19 crisis, and look forward to supporting the activities envisaged in the plan of action to strengthen our presence in international markets.

Our association is keen to make the industry more technology-oriented and innovative. While we have begun initiatives to improve digital adoption, we are encouraged by the activities envisaged in the strategy that will support industrial upgrading for our sector. This is important, particularly due to the predominant SME presence in the sector, who need additional support for improvement. We see growth prospects in new segments, including 'connected fans' leveraging digitalization, fans that cater to the purification market in light of heightened hygiene concerns after COVID-19, and industrial fans. These will require concerted and consistent steps towards upgrading the industry, throughout all aspects of the value chain.

We look forward to working with the Ministry of Commerce, the Trade Development Authority of Pakistan (TDAP), the Engineering Development Board, the Ministry of Science and Technology and other relevant public bodies to drive the sector's development and reach its full potential. We will also strengthen collaboration and market development initiatives with the private sector in Pakistan (e.g. Federation of Pakistan Chambers of Commerce & Industry) and in key international markets.

This strategy provides an excellent roadmap for the sector's future growth, with a focus on quality, competitiveness, innovation and export market expansion. As the global electric fans sector continues to grow – especially in the regions neighbouring Pakistan and with rising middle-class incomes that drive upgrading to living conditions – our sector will work on capitalizing on emerging

growth trends while continuing to strengthen current competencies.

The recommendations of the Engineering Goods Sector Export Strategy are a combined effort of public and private sector stakeholders to optimize strengths and overcome constraints. As the sector's apex industry stakeholders, we are committed to implementing this strategy, to make Pakistan an emerging leader in the electric fans sector in the region to meet domestic demand and cater to regional and global markets.

Rameez Dar
Chairman, PEFMA

Acknowledgments

The Engineering Goods Sector Export Strategy forms an integral part of Pakistan's STPF. It was developed under the aegis of the Government of Pakistan and the leadership of the Ministry of Commerce (MoC) and the Trade Development Authority of Pakistan (TDAP), in close collaboration with Ministry of Industries & Production (MoIP), the Pakistan Electric Fan Manufacturers Association (PEFMA), the Pakistan Automotive Manufacturers Association (PAMA) and the Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM).

The document benefited particularly from the inputs and guidance provided by the sector stakeholders that steered the strategy's formulation, namely the following key sector institutions.[1]

Institutions		
Aftab Engineering Services	Metaline Industries (Pvt) Ltd	Sherani Engineering
Alpine Casting	MG Motor	Skyhigh Industries Pvt Ltd
Ammarian Industry (Pvt) Ltd	Ministry of Commerce	Standard Engineering Works (Pvt) Limited
Belvin Fans (Bless Engineering Company)	Mannan Shahid Forgings Limited	Starco Fans
Champion Fans	PAAPAM	Super Asia Fans
Darson Industries (Pvt) Ltd	Pak Orient Industries	Tamoor Fans Co.
Field International	PEFMA	TDAP
GFC Fans	Precision Mates	Thal Engineering
Ghauri Tyre & Tube (Pvt) Ltd	Ravi Autos Sundar	Thermosole Industries (Pvt) Ltd.
Kadkam Parts	Razzaq Engineering	Yunas Fans
Mehran Commercial Enterprises	SB Gears	

Technical support and guidance from ITC was rendered by the following people:

Name	Designation
Tauqir Shah	Revenue Mobilisation, Investment and Trade project (ReMIT) project coordinator
Shoaib Zafar	Project advisor
Usama Iftikhar	National sector consultant
Charles Roberge	Senior Officer Export Strategy
Alexandra Golovko	Advisor, Export Strategy and Competitiveness
Anushka Wijesinha	Manufacturing and digitisation strategy specialist
Aishwarya Nahata	International consultant
Helmut Kohlert	Engineering goods sector international expert

1.– The full list of public-private stakeholders that participated in the consultations and their names is available in Annex I.

Note for the reader

In order to boost export growth, the Ministry of Commerce (MoC) has developed the Strategic Trade Policy Framework (STPF) 2020–25, which was approved in November 2021. ITC provided technical support to MoC and the Trade Development Authority of Pakistan (TDAP) to design selected sector export strategies of the STPF priority sectors. This initiative, called National Priority Sectors Export Strategy (NPSES), focused on 10 of the 18 STPF priority sectors through a consultative process.

The Engineering Goods Sector Export Strategy was developed on the basis of a participatory approach, during which more than 50 Pakistani industry leaders, small business owners and public sector representatives held consultations to reach consensus on key sector competitiveness issues and priority activities. These inclusive consultations were held in a hybrid model owing to the travel restrictions imposed due to COVID-19 pandemic.

Besides in-depth qualitative and quantitative research and value chain analysis, these consultations were complemented by visits and interviews by the national consultants with domestic firms to guide the strategy with insights and market intelligence as well as buyers' requirements in terms of quality standards, safety compliance, packaging, distribution channels and prices, etc.

The Engineering Goods Sector Export Strategy builds on ongoing initiatives in areas of private sector development, regional integration, investment and youth economic empowerment. Equally importantly, the sector strategy is also complemented by an effort to establish the proper implementation responsibilities among key stakeholders early on to ensure timely implementation of activities, whether by the public sector, private sector or international development agencies. This strategy's principal outputs are endorsed, coherent and comprehensive export strategy documents with a five-year detailed plan of action (PoA) and implementation management frameworks.

This document was approved as the official export strategy for the Engineering Goods Sector 2023-2027 by the Engineering Goods Sector Specific Council and endorsed by the Ministry of Commerce of Pakistan.

Contents

Figures

Tables

Boxes

Acronyms and abbreviations

Unless otherwise specified, all references to dollars ($) are to United States dollars (USD).

B2B	Business-to-business
CAGR	Compound annual growth rate
CBU	Completely built up
EDB	Engineering Development Board
FDI	Foreign direct investment
GSP	Generalized System of Preferences
ITC	International Trade Centre
MENA	Middle East and North Africa
MoC	Ministry of Commerce
PoA	Plan of action
PwC	PricewaterhouseCoopers
R&D	Research and development
SMEs	Small and medium-sized enterprises
STPF	Strategic Trade Policy Framework
TDAP	Trade Development Authority of Pakistan
URI	University–research–industry

©shutterstock

EXECUTIVE SUMMARY

The present strategy outlines a proposed path for the development of the engineering goods sector in Pakistan. It is a five-year endeavour that was defined through a consultative process between public and private sector stakeholders. The strategy addresses constraints in a comprehensive manner and defines concrete opportunities that can be realized through the specific steps detailed in its plan of action (PoA). The Engineering Goods Sector Export Strategy is an integral part of Pakistan's Strategic Trade Policy Framework (STPF).

Engineering goods has been identified as a new growth driver of Pakistan's industrial development and export progress. Existing competencies provide a strong foundation to build from, to create more competitive and export-ready firms. Expanding the sector through trade will, therefore, require the sector to identify opportunities for building on these strengths.

Globally, the engineering goods sector is quite wide-ranging, and includes everything from automobiles, auto spare parts, fabricated metal products, industrial machinery and equipment, bicycles, medical devices, electric fans, and so on. In light of the complexity around the engineering goods sector, Pakistan has to choose a focus for the industry. In this regard, the Ministry of Commerce (MoC), as part of the Strategic Trade Policy Framework (2020-25), has identified priority subsectors. As such, this engineering goods sector strategy for Pakistan covers the manufacture of automobiles (tractors, motor vehicles for transport of persons and goods, special purpose vehicles, parts and accessories for tractors, motorcycles, parts and accessories for motorcycles, and trailers and semi-trailers), and electric fans (table or roof fans, and those excluding table or roof fans)[1].

Pakistan's automobile sector comprises assembly and manufacturing units for production of cars, tractors, trucks and buses, 4x4s, light commercial vehicles, and two- and three-wheelers. Pakistani firms have been supplying parts and components to international firms and have also been manufacturing vehicles for the domestic market. This points to strong capabilities in the sector, and opportunities to strengthen exports. In the electric fans subsector, Pakistani manufacturers mainly focus on consumer (household fans) rather than industrial fans. The category of 'table, floor, wall, window or ceiling fans' – which is the category Pakistan most exports – has seen a modest uptick in the past five years.

Pakistan's potential in both the automobile and electric fans subsectors lies in the proximity to regional markets – ranging from the Middle East and North Africa to Sub-Saharan Africa. The large and growing market in Africa is a particular opportunity for Pakistani firms. The government's Look Africa policy initiative plans to double bilateral trade with Africa by 2025, and the increase in commercial diplomacy presence in key markets would support Pakistani engineering goods firms' market entry and growth in the dynamic African continent.

Changing patterns of demand and production in global automobiles and electric fans mean that Pakistani producers will need to adapt to succeed in international markets. For the automotive sector, some compelling strategic future shifts identified by sector stakeholders include export of components to regional economies in Africa and South Asia, hybrid cars and motorcycles, playing stronger in the global supply

1.– There is a separate spare parts strategy adopted by the Government, and therefore this strategy does not cover auto spare parts within automobiles.

chain, establishing offshore offices and warehouses, using simulation software for product development, forming joint ventures with technologically advanced producers, and adopting automation and investments in new technology. For the electrics fans sector, strategic future shifts include producing fans that are more powerful, but lighter, shifting from the current domestic heavy focus to international markets and, most notably, producing fans with air filters and sensors that automatically detect temperature and moisture and filter out harmful elements.

It is clear that there are many opportunities for both automobile and electric fan manufacturers to supply new sources of demand, and Pakistani firms risk being left behind in future if they are not able to adapt. The sector will need to balance these considerations in charting the way forward. For example, automotive sector growth is receiving a new impetus due to changing environmental regulations and demand for e-mobility and other innovative and energy efficient solutions. In automobiles, the shifts seen globally in greater technology embedding within vehicles, including digitalization and electrification, will influence the sector's future. In electric fans, the sector's highly price competitive nature and the development of value-added products (connected devices, air purification properties and energy efficiency) for the home and industrials segment will influence the growth trajectory there.

Pakistan's automobiles and electric fans subsectors have grown over the years, benefitting from this market and supportive policies and skills, though its contribution to exports has been below potential. In the automotive sector, for example, some compelling foundational factors that will remain as residual assets into the future include the low labour cost, skilled middle-level human resources, experience in working with Japanese original equipment manufacturers (and thus, understanding of quality requirements), ability to work with low-volume orders and convenient geographic location to access regional markets.

Pakistan's engineering goods sector faces several competitiveness challenges, which, if overcome in a comprehensive and timely manner, can make Pakistan a leading manufacturer and exporter in this sector, with a strong regional presence, and a desirable investment destination for production in the region.

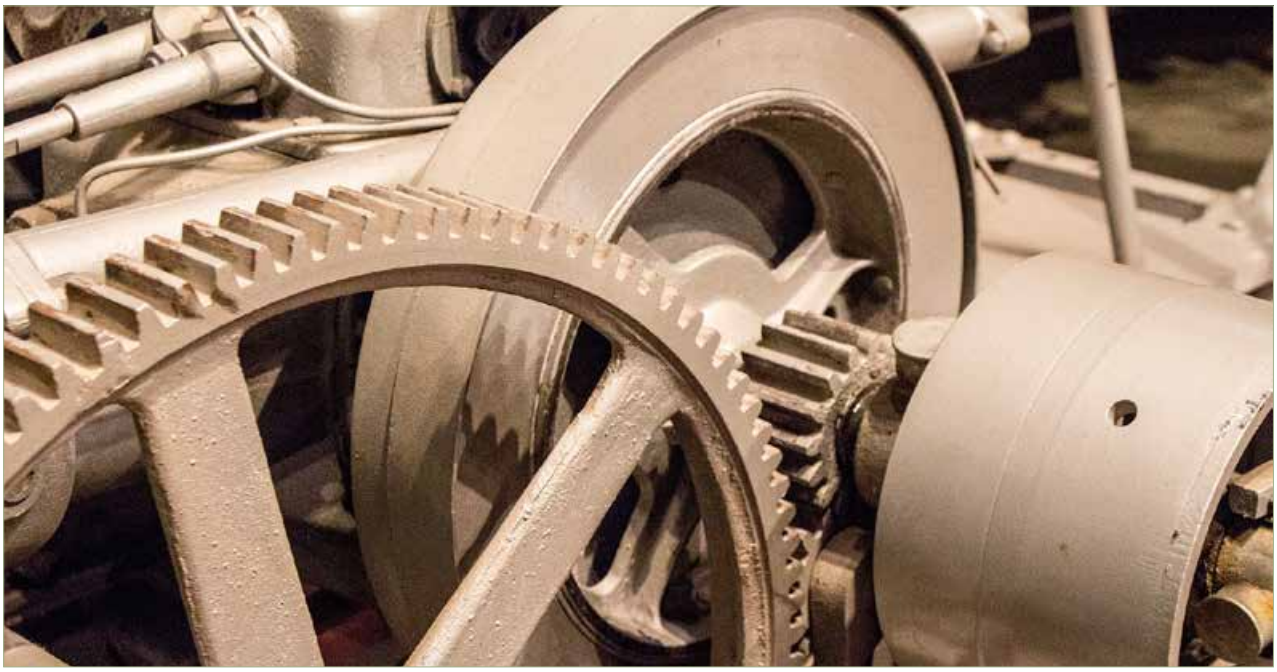
VISION AND STRATEGIC OBJECTIVES

To achieve the development of Pakistan's engineering goods sector, the present strategy provides a roadmap and a plan of action (PoA) geared at achieving the following overall vision:

> **"Realize the enormous potential of Pakistan's engineering goods sector through high-quality products, innovation, and new markets to drive exports and inclusive growth."**

This vision statement, which was agreed on by all engineering goods stakeholders in Pakistan, delineates this strategy's proposed vision and strategic objectives. The strategy's plan of action (PoA) responds to this vision by addressing the sector's constraints and leveraging opportunities comprehensively. To this end, specific efforts will be made in the following strategic directions.

Strategic Objective 1: Foster an enabling environment for the sector to grow and compete	• 1.1 Improve standards compliance in raw materials and finished products • 1.2 Address anomalies in the tax structure • 1.3 Improve access to a cost-effective energy supply
Strategic Objective 2: Increase availability of skilled and competent labour	• 2.1 Improve sector-relevant vocational training • 2.2 Expand the skilled labour pool
Strategic Objective 3: Strengthen technology upgrading and innovation	• 3.1 Improve access to and adoption of new technology • 3.2 Foster an enabling environment for innovation
Strategic Objective 4: Strengthen export promotion and market access	• 4.1 Enhance international presence and positioning of Pakistani engineering goods • 4.2 Focus on and accelerate export promotion efforts



©shutterstock

The way forward in automobiles and electric fans will hinge crucially on building domestic manufacturing capabilities, and through this and alongside it to strengthen export capabilities. Some of the some of the key areas to be addressed include:

- Addressing the vital skills upgrading requirements;
- Improving current manufacturing practices;
- Adopting technology in production processes;
- Enhancing global market entry abilities;
- Strengthening the research and development (R&D) and innovation ecosystem to improve quality of existing products and processes;
- Diversifying into new and improved products.

Some current advantages will continue into the future, such as the availability of labour, the geographic location and proximity to growing markets like Africa and the Middle East, and the large domestic market that makes initial investment attractive. The existence of some foreign investment already in the automobiles sector bodes well for investment prospects into engineering goods manufacturing, which have hitherto been tepid compared to other sectors in Pakistan and Pakistan's competitors.

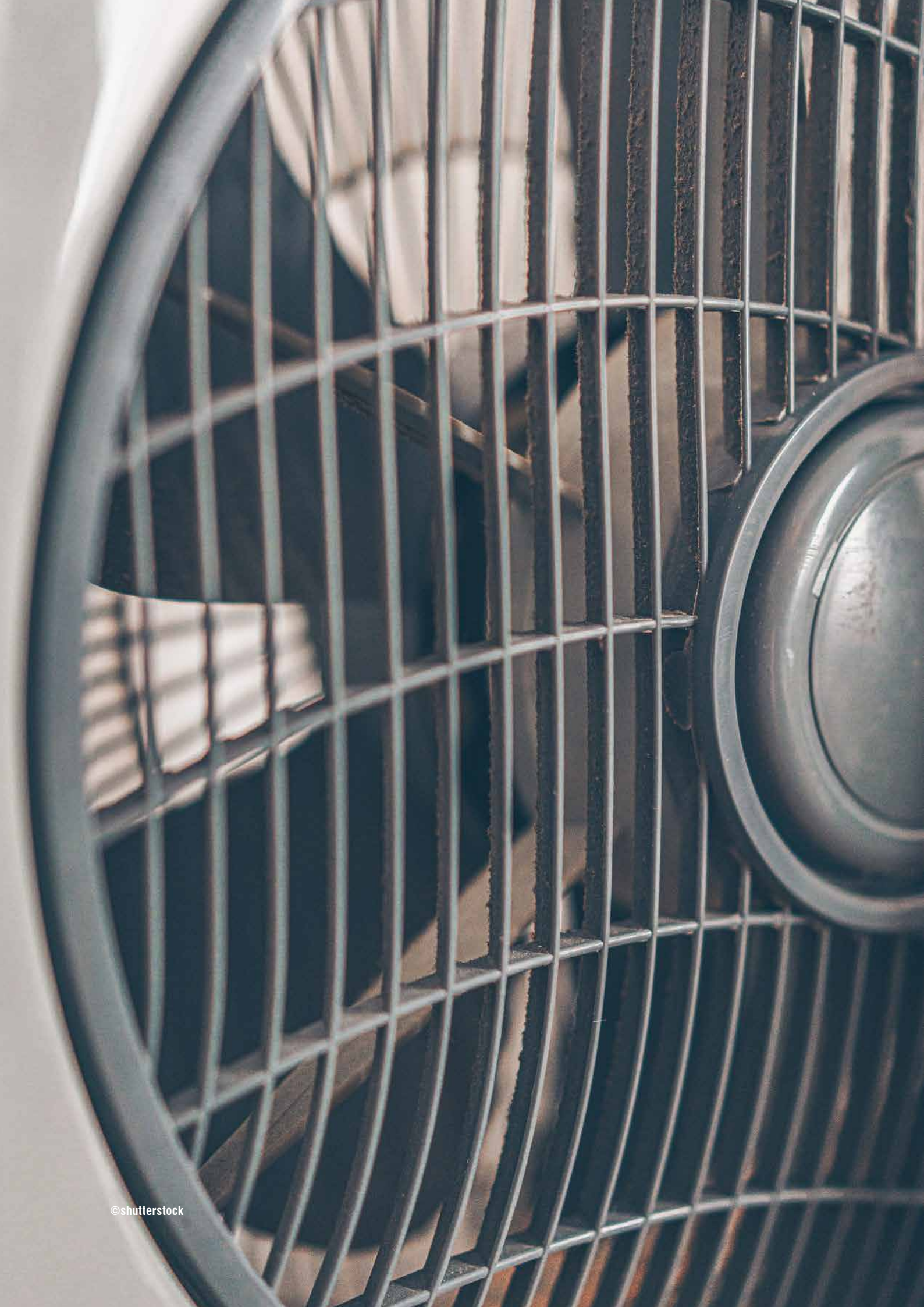
MOVING TO IMPLEMENTATION MANAGEMENT

The strategy process considered current capabilities, constraints and future shifts and opportunities for Pakistan's engineering goods sector, and industry stakeholders extensively evaluated future orientations and upgrading trajectories. The strategy has come up with a pragmatic and forward-looking roadmap for upgrading and internationalization, and can be driven successfully through timely and appropriate resource allocation and effective public-private collaboration for implementation.

Accordingly, a public–private sector specific council for the engineering goods sector is established, operationalized and empowered. The engineering goods sector specific council will be responsible for overall coordination, provision of rapid solutions to regulatory and procedural bottlenecks, policy guidance and the monitoring of industry development against the strategy's strategic objectives.

The following key areas of intervention are priorities to facilitate the strategy's implementation

- Address quality standards issues in inputs and final products;
- Embark on a comprehensive skills development programme;
- Foster the innovation ecosystem to enable product and process upgrading as well as sustainability;
- Resolve tax anomalies and introduce a competitive energy tariff.



©shutterstock

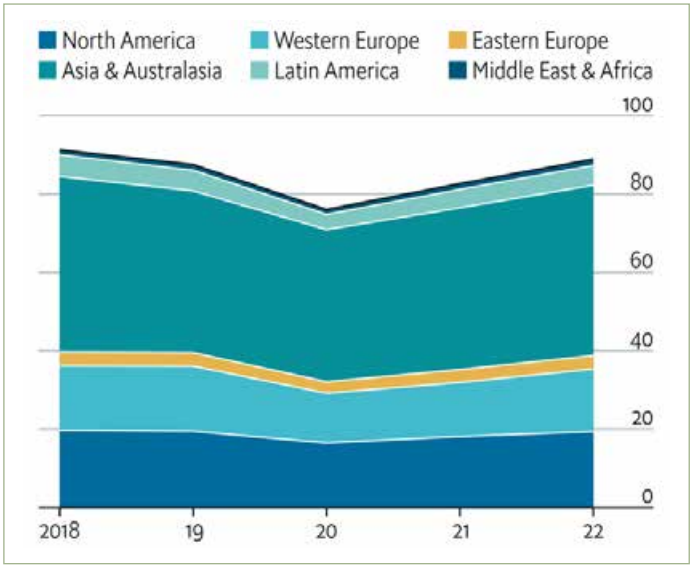
ENGINEERING GOODS – A RESILIENT GLOBAL INDUSTRY WITH A DIVERSE MANUFACTURING BASE

Automobiles subsector

Globally, the automobiles subsector – trade in final goods as well as components – is a major contributor to international flows of trade and investment. Emerging trends – including the rise of new sources of demand in middle-income economies, shifting regulations and market expectations on vehicles and components, and technological change – will require parts producers to be flexible in order to succeed. The automotive industry is a key industry in all major markets, and its importance is continually increasing, even as the pandemic curtailed mobility during parts of 2020-21.

Global demand is set to recover and surpass pre-pandemic levels. According to forecasts by the Economist Intelligence Unit (2021), global sales of new vehicles will rise by 7.5% in 2022, taking it to beyond pre-pandemic levels, with the recovery being led by Asia and North America. Meanwhile, many vehicle manufacturers will still struggle to meet this recovery in demand amid continuing supply chain disruptions.

Figure 1: New vehicle sales by region (million units)



Source: Economist Intelligence Unit (EIU) (2021).

Globally, the automotive sector is concentrated in a few countries and firms. Much of global supply is shaped by leading firms in the sector. Combined, the world's 10 largest manufacturers – concentrated in East Asia, Europe and the United States of America – accounted for approximately two-thirds of global production in 2017 (Table 1).

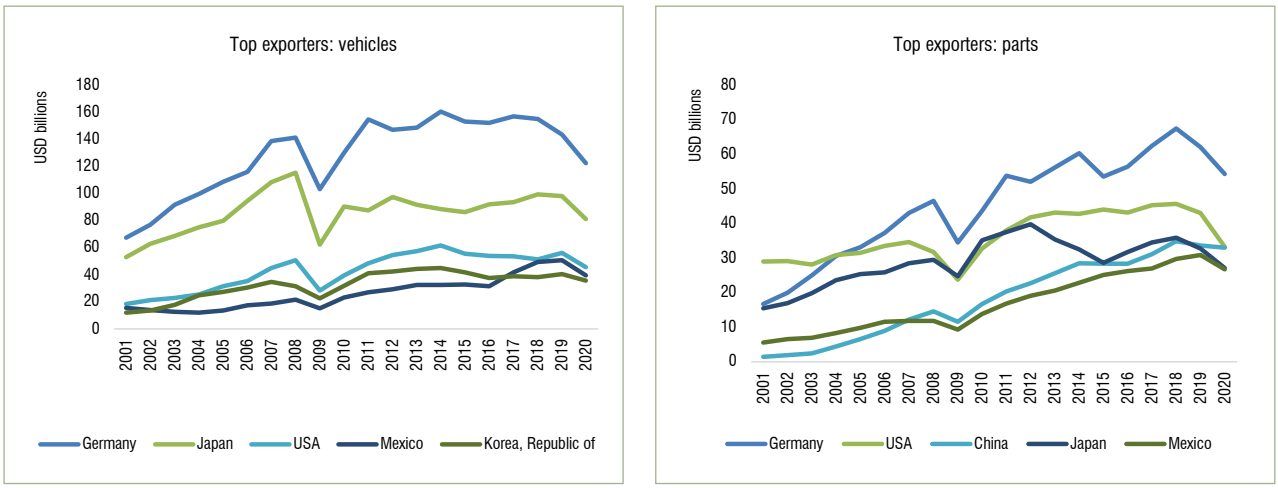
Table 1: Largest vehicle manufacturers (2017)

Rank	Firm	Country	Vehicles manufactured	Share of global production (%)
1	Toyota	Japan	10 466 051	10.8%
2	Volkswagen	Germany	10 382 334	10.7%
3	Hyundai	The Republic of Korea	7 218 391	8.3%
4	General Motors	United States	6 856 880	8.2%
5	Ford	United States	6 386 818	6.8%
6	Nissan	Japan	5 769 277	5.9%
7	Honda	Japan	5 235 842	5.3%
8	Fiat	Italy/United States	4 600 847	4.9%
9	Renault	France	4 153 589	3.6%
10	Peugeot S.A.	France	3 649 742	3.3%

Source: International Organization of Motor Vehicle Manufacturers (OICA) 2017.

Global exports of automobiles and parts thereof are mostly dominated by the same countries – the Federal Republic of Germany, Japan, the United States and the United Mexican States, with the exception of the Republic of Korea as the top exporter of automobile vehicles and the People's Republic of China as the top exporter of automotive parts. Germany, with $122 billion in vehicle exports and $54 billion in parts exports, provides 20% of vehicle and 16% of parts exports globally. Japan takes second place in global vehicle exports with a share of 13%, followed by the United States, Mexico, and Republic of Korea. These five countries together account for 52% of the world's automotive vehicle exports. The United States closely follows Germany as the second-biggest exporting country of automotive parts, with a share of 9.8%. This is followed by China (9.7%), Japan (8%) and Mexico (7.9%) (Figure 2).

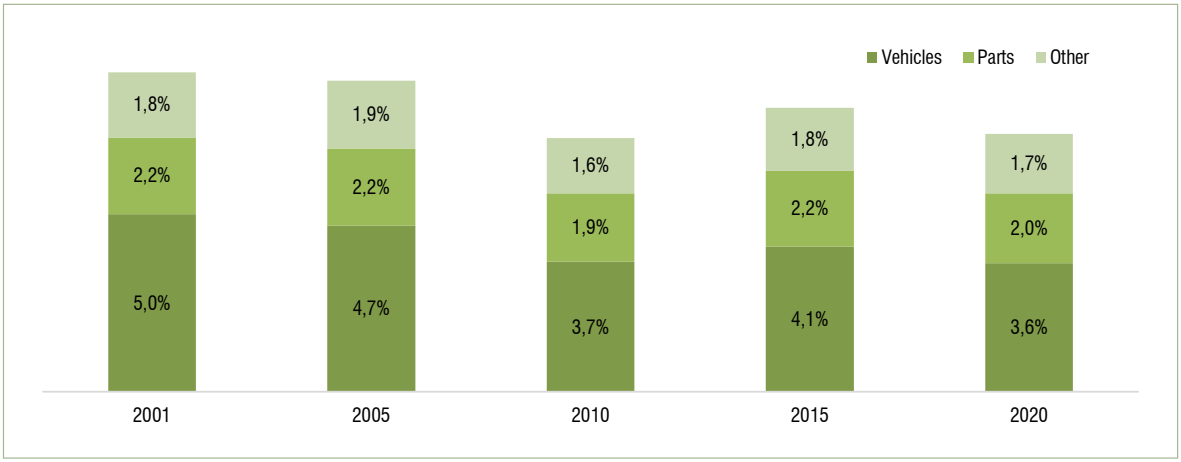
Figure 2: Major exporters of automobiles and parts (2001-20)



Source: ITC Trade Map.

While global exports of passenger vehicles fell as a share of total goods exports in 2001-20, from 5% to 3.6%, the shares of parts (2.2% to 2%) and other automotive products (1.8% to 1.7%) have stayed fairly stable (Figure 3).

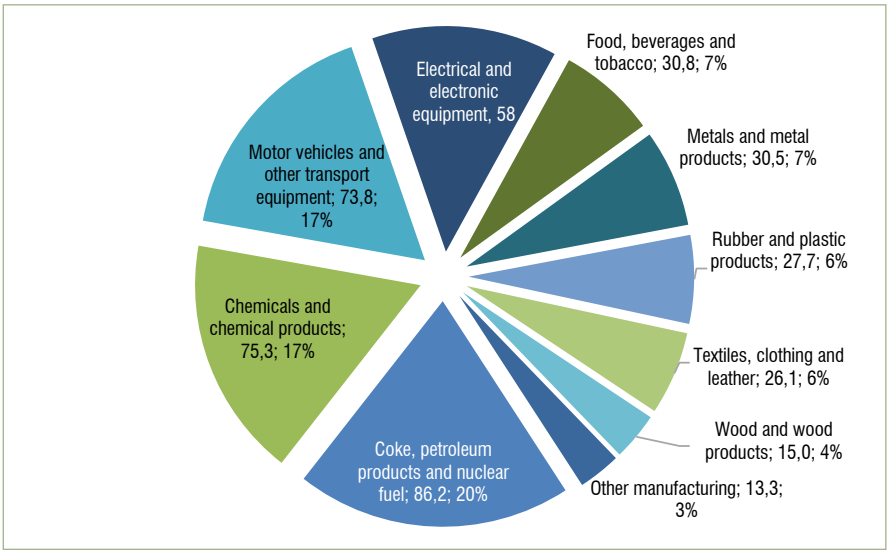
Figure 3: Export share of vehicles and parts as % of total goods exports (2001-20)



Source: ITC Trade Map.

The automotive sector is also a major contributor to global investment. In 2018, there was $73.8 billion in announced greenfield foreign direct investment (FDI) projects in the production of motor vehicles and other transport equipment, accounting for close to 17% of the total value in manufacturing activities around the world (Figure 4). While this share has declined somewhat from a recent peak of 26.7% in 2012, it is nevertheless the third-biggest sector in terms of attracting FDI. Higher capital investment in new and advanced technologies across the automotive sector is leading to increasing demand for high-density batteries, increasing adoption of hybrid power trains, rising advanced pump demand for mid-sized segments, and increasing automotive production and vehicle parts. Some industry analysts also expect the automotive industry to shift towards increasingly modular systems.

Figure 4: Value of announced greenfield FDI projects in manufacturing (USD billion)



Source: ITC Trade Map.

©shutterstock

CURRENT TRENDS IN ELECTRIC MOBILITY AND ENVIRONMENTAL REGULATIONS

While electric vehicles represent a growing market share, they still account for a small share of global vehicle sales. Internal combustion engines will not be replaced anytime soon, as electric vehicles are held back by the lack of considerable economies of scale in battery production, environmental considerations in manufacturing and sourcing, and their reliance on political support. That said, producers choosing where to invest continue to push forward electric vehicle manufacturing. Automotive sector manufacturers will thus need to decide on their medium- and long-term strategies with due consideration of these market factors, as well as of their knowledge base, technical capacities and potential to invest in new technologies. Quality is particularly important to electric vehicle producers, and high levels of technology use and knowledge are required. Regulatory factors are also motivating product innovation. Stringent emission norms on automobile manufacturers, for example, is motivating the design of lightweight and energy efficient vehicle parts. At the same time, higher import taxes and other barriers to market access are affecting international supply chains.

ELECTRIC MOBILITY (E-MOBILITY) AND IMPLICATIONS FOR TRADITIONAL AUTOMOTIVE MANUFACTURE

Regulatory pressure is pushing the awareness and adoption of electrification, which is driving battery electric vehicles as a key trend, according to industry executives (see Figure 5). The other key trend is towards downsizing the traditional combustion engines and introducing greater efficiency, as well as new services around big data and autonomous driving. While e-mobility is certainly a buzz word in today's automotive economy, the prospects for the combustion engine are not fully written off. Many issues with e-mobility remain unresolved, for example, battery technology, and the rare and ecologically challenging inputs, and the burden of recycling old batteries. So, it is likely that combustion engines will still last for some time. From the predicted 123 million vehicles manufactured in 2030, two-thirds will still be combustion engines or hybrids, according to some estimates (see Figure 6). Therefore, there is still a large market for traditional combustion engines. More optimistic studies regarding e-mobility (see Figure 7) place forecasts for 2030 at a 50% share of hybrids, with still some combustion engines – albeit a much smaller share.

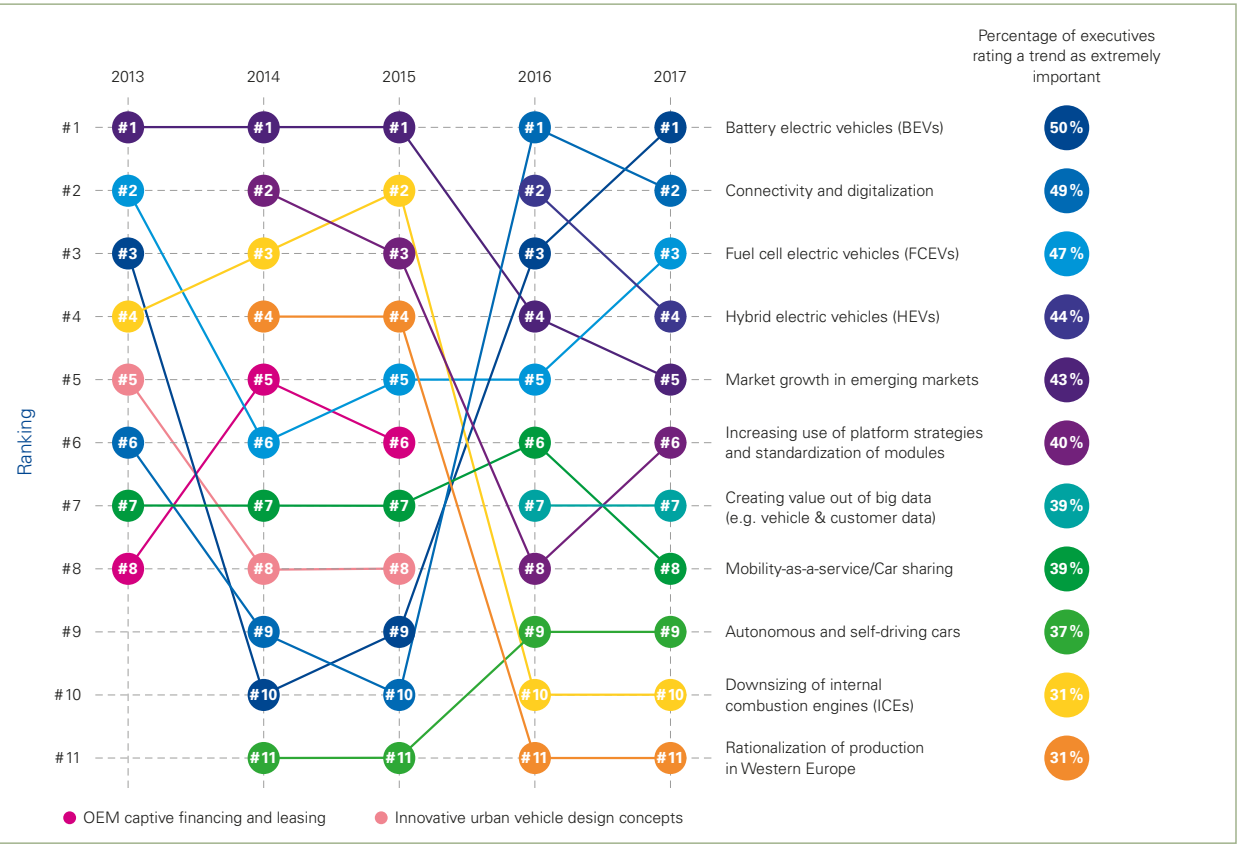
Among the reasons cited for the unlikely 'dramatic shift' between combustion engines vs electric is that the economies of scale in battery production are still not impressive, and this keeps prices of electric cars relatively high. Government support is needed to push electric vehicles into mainstream markets on a wider scale, and this state intervention is seen only in a few markets. Additionally, the environment credentials of electric cars are still debated, because, even though they produce no emissions in driving, the environmental and ecological costs in sourcing raw materials can be high (e.g. mining of cobalt from the Democratic Republic of the Congo – see Box 1) and the battery lifespan remains a key issue.

Box 1: Cobalt concerns in the electric vehicle supply chain

On the back of the UN Climate Change Conference in 2021 (COP26), the transition from petrol to electric vehicles is being talked about as a key step in reducing carbon emissions. Global sales of passenger electric vehicles – excluding hybrids – are expected to soar from 3.3 million in 2021 to 66 million in 2040. Cobalt is one of the world's most sought-after minerals, and is a key ingredient in the batteries that power most electric vehicles. Yet there is growing concern that cobalt mining is leaving human rights abuses in its wake, threatening the sustainability of the larger electric vehicle transition. The World Bank estimates that demand for cobalt production will increase 585% by 2050. Basic wages of a cobalt miner in the Democratic Republic of the Congo – the world's largest supplier of this rare earth metal (approximately 70%) – is the equivalent of approximately $3.50 a day, and miners endure harsh working conditions. As noted in an article by The Guardian newspaper: 'Stories of the harsh and dangerous working conditions endured by miners in the DRC's informal, or artisanal, cobalt mines – of child labour and miners being buried alive as tunnels cave in – have provoked an international outcry in recent years, forcing the western technology and automotive brands that rely on the mineral to look for ways to source "clean" cobalt, free from human rights abuses.' Some companies in the cobalt supply chain have promised to stop sourcing from informal and artisanal mines (estimated to be 15%–30% of supply) and instead get the mineral from large-scale industrial mines, which are seen as a safer option both for workers and corporate reputations. Yet, electric vehicle manufacturers are not only working out more ethical supply chains for their cobalt needs, but have also begun exploring shifting away from cobalt. Other battery technologies that do not use cobalt – such as nickel-iron-aluminium cathodes or lithium-iron-phosphate ones – do exist and are actively being developed for use in new electric vehicles. Tesla's current vehicle batteries contain less than 5% cobalt and the company has announced they are developing their own batteries that will be cobalt-free. In 2020, General Motors unveiled a new battery system that uses 70% less cobalt than current batteries.

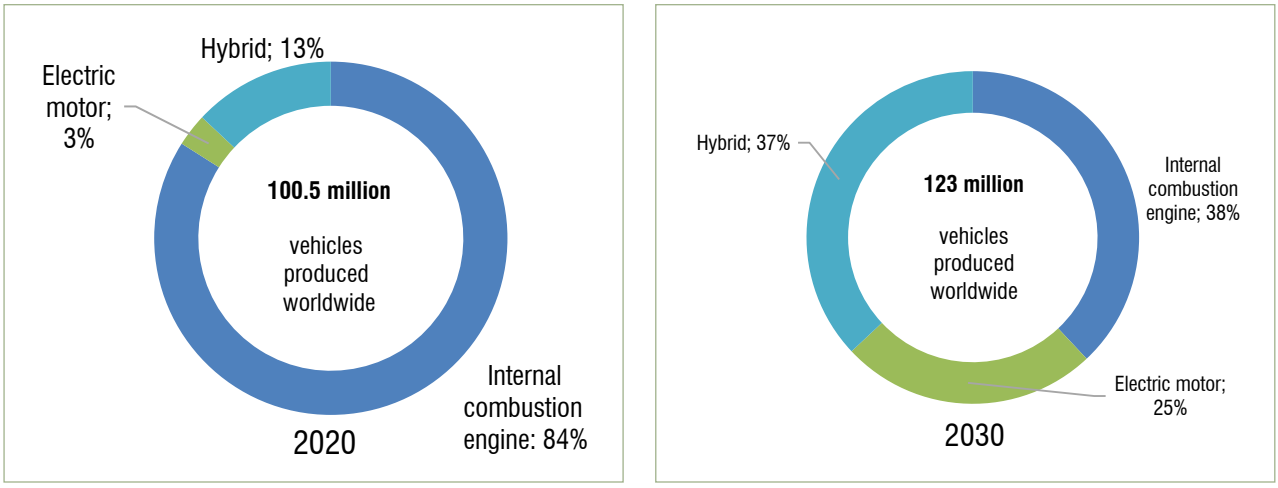
Sources: Council on Foreign Relations, Benchmark Mineral Intelligence (BMI), World Bank, *Observer,* Fresh Energy and *The Guardian.*

Figure 5: Development of the awareness for electrification



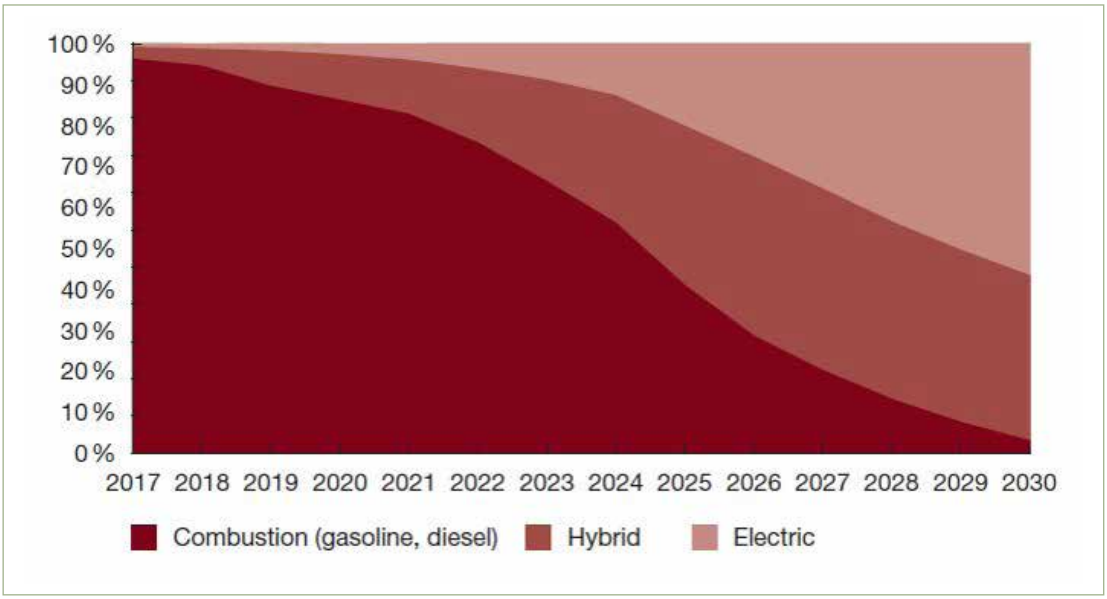
Source: KPMG, Global Automotive Executive Survey 2017.

Figure 6: Survival of combustion engines



Source: Oliver Wyman (2018). 'Automobilindustrie vor stürmischen Zeiten'. Available from https://www.ots.at/presseaussendung/OTS _ 20180517 _ OTS0089/automobilindustrie-vor-stuermischen-zeiten.

Figure 7: Development of drive systems (2017-30)

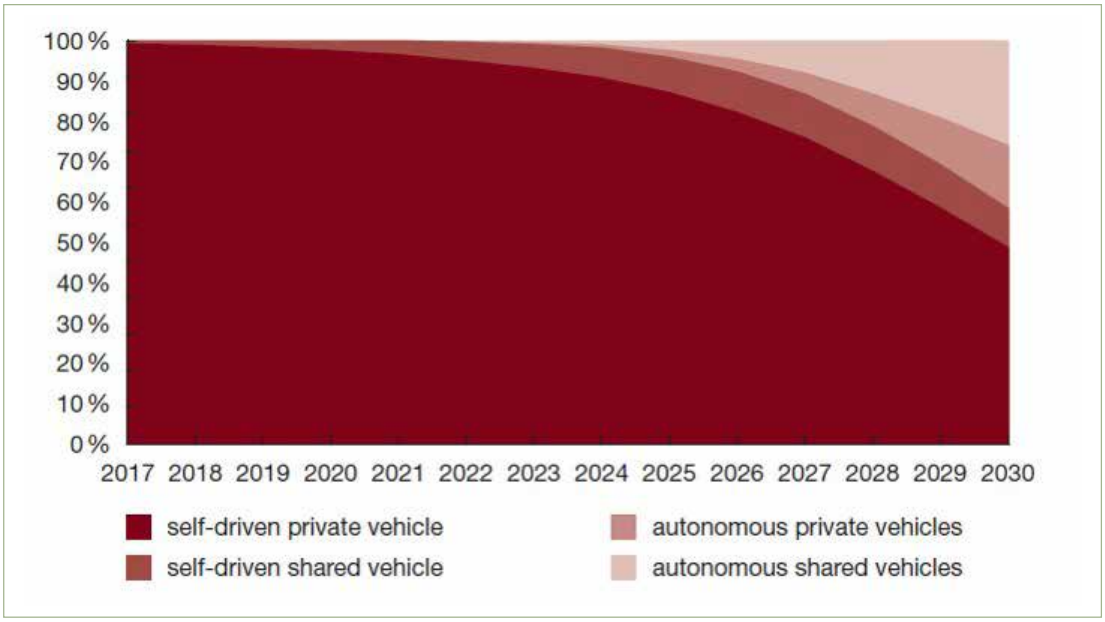


Source: PricewaterhouseCoopers (PwC) (2019). Study, 'Five trends transforming the Automotive Industry'.

VEHICLE USAGE PATTERNS DRIVEN BY TECHNOLOGY WILL INFLUENCE PRODUCTION

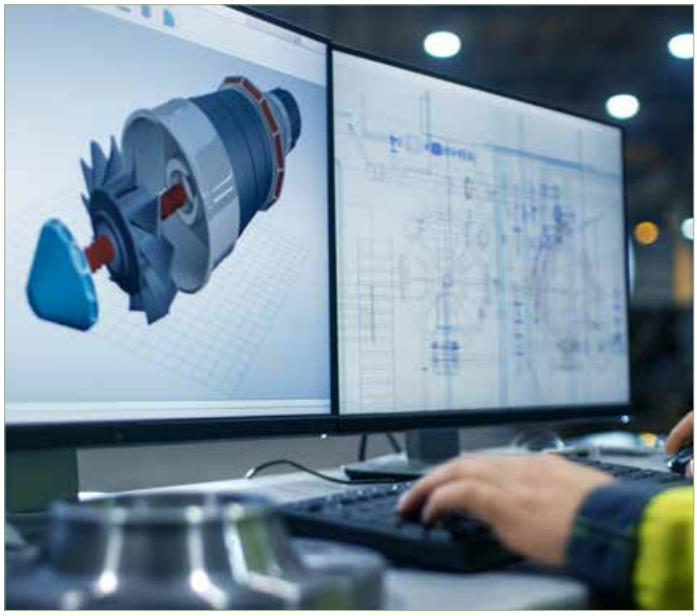
The advent of the industrial internet (internet of things) and the sharing economy are also reshaping the future of the automotive industry. It will influence the usage of vehicles. A study on 'Five trends transforming the Automotive Industry' (PwC, 2019) shows the changes in mobility forms up to 2030 (Figure 8).

Figure 8: Percentage of mobility forms (2017–30)



Source: PwC study (2019). 'Five trends transforming the Automotive Industry'.

While these figures are for Europe, those for the United States are expected to be similar. According to PwC projections, by 2030, 'not even half of all vehicle mileage will be covered in a classic, self-driven private car. Autonomous forms of mobility could in the meantime account for more than 40% of all vehicle mileage' (PwC, 2019). This change of mobility usage will, in turn, influence automotive production. According to PwC, by 2030 the vehicle inventory is expected to drop from 280 million to 200 million in Europe, and similarly in the United States. The vehicle inventory in China will decline in size later; it could peak at more than 310 million units before reducing to 276 million vehicles by 2030 (PwC, 2019).



©shutterstock

NEW OPPORTUNITIES IN THE E-BIKE SEGMENT

The e-bike segment is a new market segment and is yet to be dominated by any major players. As such, it is still open for competitive players to emerge and win. Moreover, good products can establish with their own branding, as clear brand preferences are yet to emerge. In particular, the German market demonstrates strong potential. Approximately 1.95 million e-bikes were sold in Germany in 2019, which is more than half of all e-bikes sold in the European Union. Of these, approximately 1.05 million were imported. The market grew three-fold in 2015-20. Older populations prefer e-bikes, and the segment's growth is expected alongside a further ageing population. Notably, the average sales price for a new e-bike is €2.975 and can derive good revenue for manufacturers. The e-bike market has also just begun segmenting into many diverse segments, such as city e-bikes, trekking e-bikes, e-mountain bikes and e-folding bikes.[2] There is potential for early entrants to this market to benefit from the emerging trends.

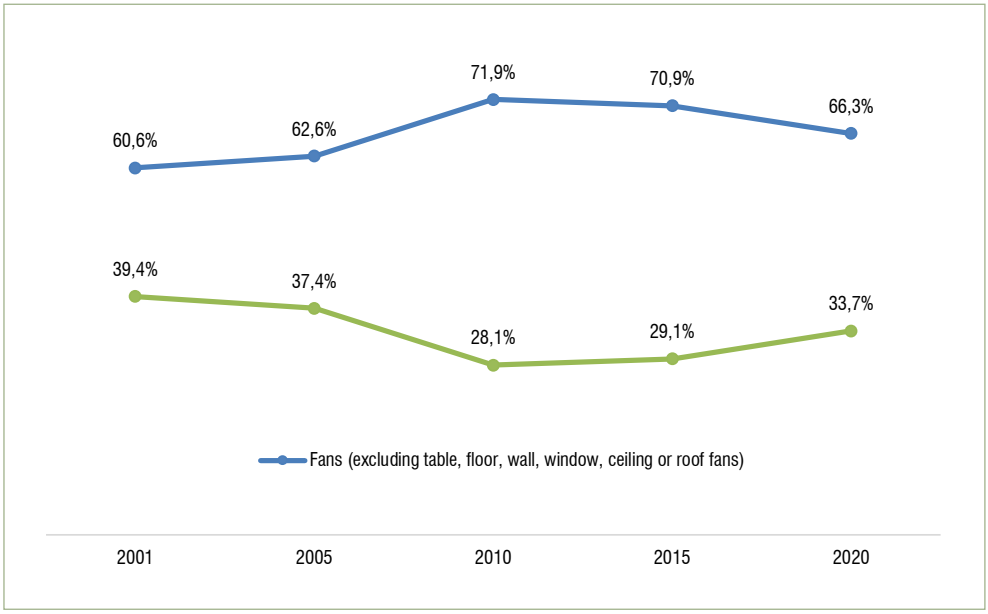
2.– Source: Ebike-news.de (25 July 2021). Based on two German bicycle associations, for production and for trade (2020).

Electric fans subsector

ELECTRIC FANS DEMAND GROWTH IS STEADY, WITH EXPORTS DOMINATED BY CHINA AND IMPORTS DRIVEN BY THE UNITED STATES

The electric fan market can be broadly classified into four major categories of ceiling fan, wall mount, table or desk and standing fans, with other categories including exhaust fans, cabinet fans, misting fans and industrial fans. The global fan market is dominated by the ceiling fan type, which accounts for more than 45% of the global market. With the characteristics of saving floor space, circulating air conditioning and adding instant evaporative air movement, the wall-mounted fan segment is expected to grow with the highest anticipated compound annual growth rate (CAGR) of 4.38%. The desk/table fan segment has gained immense popularity post the COVID outbreak, where employees working from home demanded a cost-effective and non-space-consuming ventilation option. In fact, the category of 'table, floor, wall, window or ceiling fans' –which is the category Pakistan most exports– has seen a modest uptick in the past five years (see Figure 9).

Figure 9: Recent global export trends in fans (2001-20)



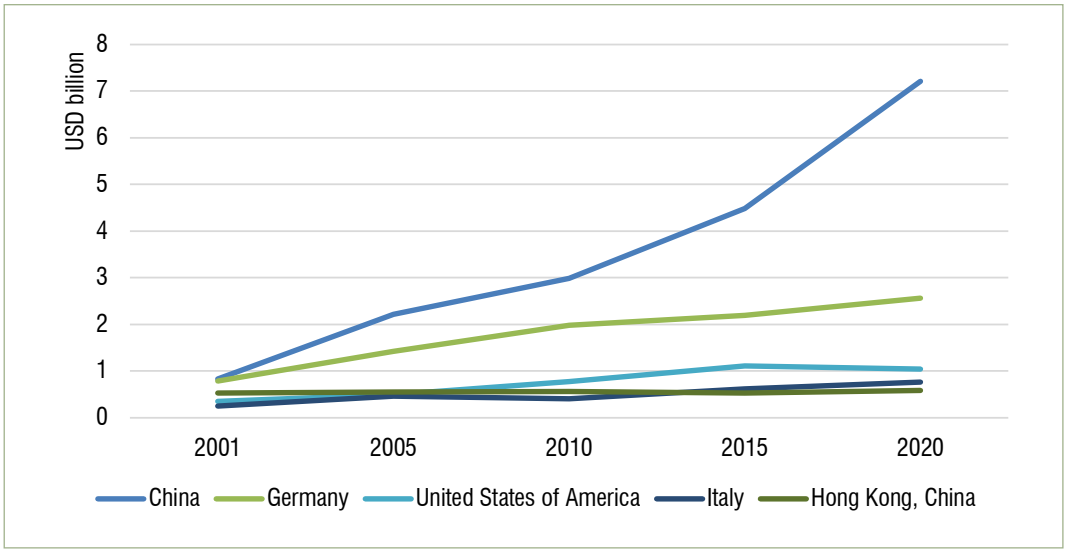
Source: ITC Trade Map.

Meanwhile, the major global exporters are Germany, the United States, the Republic of Italy, Hong Kong Special Administrative Region and, of course, China, which is the global leader (78% market share) and has seen exports more than double in the past decade (see Figure 10 and Figure 11).

The market for electric fans in the consumer business is considered to be a growing industry. New countries, such as the Socialist Republic of Viet Nam, are continually entering the market. The global ventilation fan market size was valued at $2.29 billion in 2018 and was expected to grow at a CAGR of 7.7% in 2019-25 (Grand View Research, 2020). Another estimate, by Technavio (2021), puts the growth in the electric fans market at a CAGR of 3% in 2020-24, growing by $2.06 billion in incremental value in the next five years. The Asia-Pacific (APAC) region is forecast as the key growth region (yielding approximately 41% of the global growth) and is expected to offer significant market opportunities.[3]

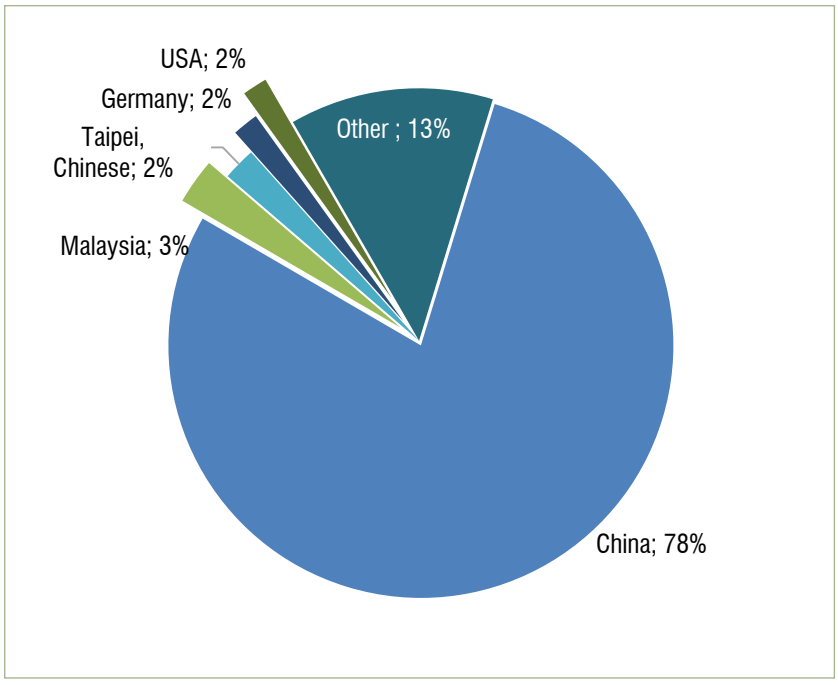
3.– See https://www.prnewswire.com/news-releases/over--2-billion-growth-in-global-electric-fans-market-2020-2024--41-growth-to-originate-in-apac--technavio-301241941.html.

Figure 10: Growth in exports of Top 5 global exporters of electric fans (2001-20)



Source: ITC Trade Map.

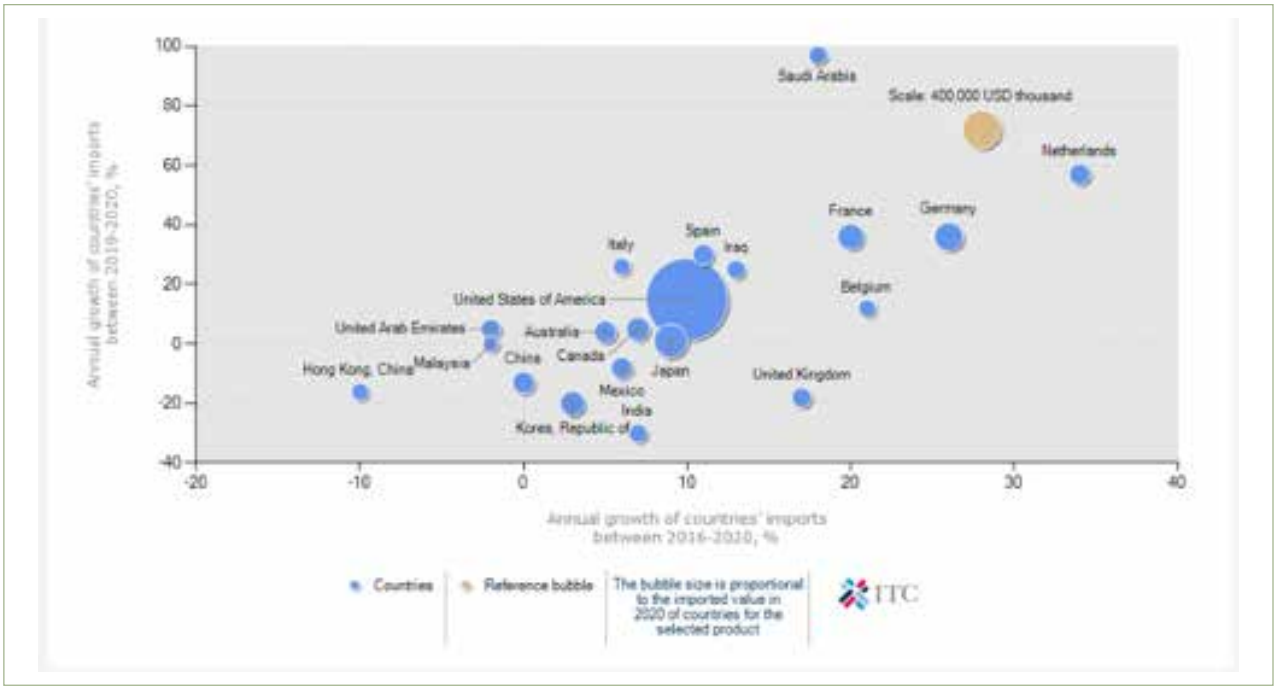
Figure 11: China dominates global market share of electric fans exports by country (2020)



Source: ITC Trade Map.

The United States remains the largest importer of fans and has shown steady year-on-year growth of imports, as evidenced by Figure 12.

Figure 12: United States leads world imports of electric fans, by size of imports and annual growth



Source: ITC Trade Map.

SOCIOECONOMIC FACTORS WILL CONTINUE TO DRIVE STEADY DEMAND GROWTH FOR ELECTRIC FANS

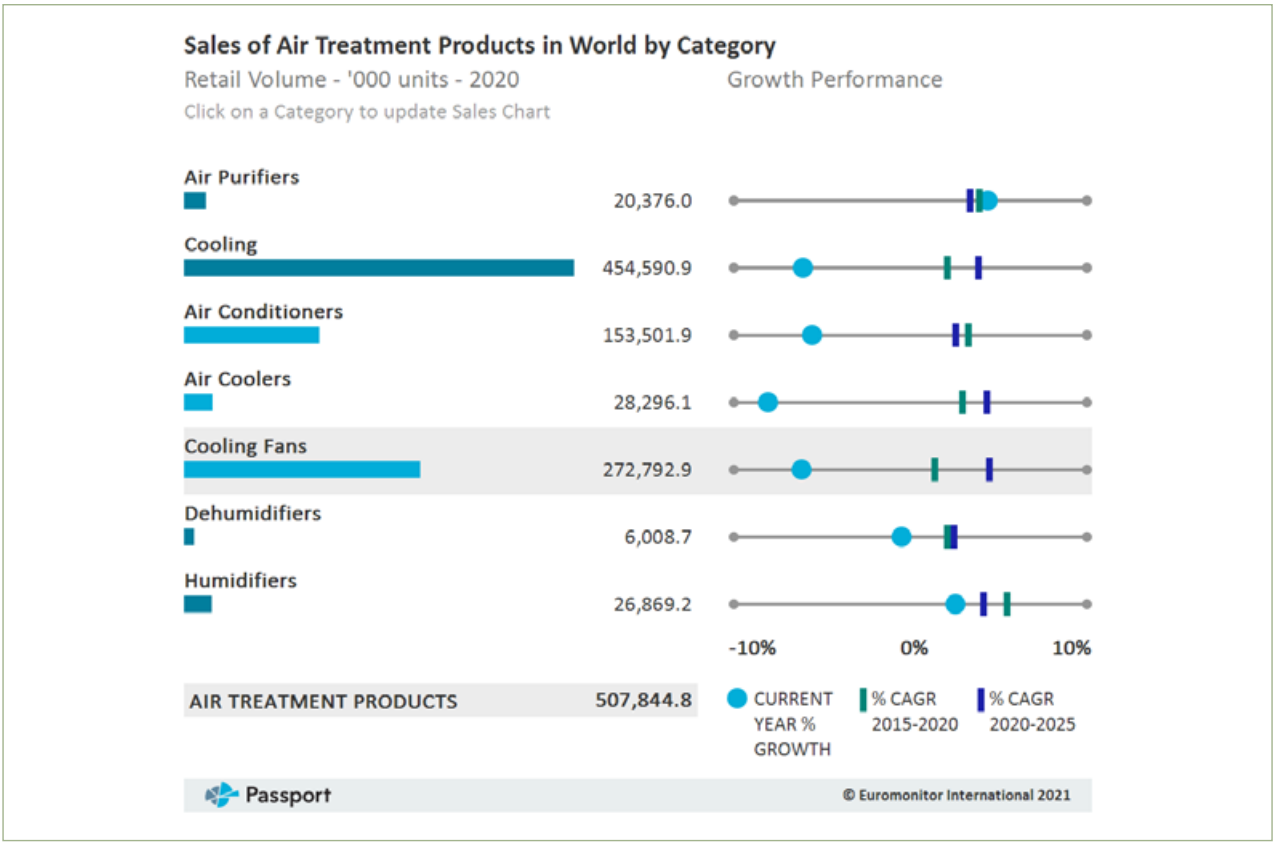
A baseline factor driving growth in electric fans is the considerable growth in the construction sector across the globe, especially in the domestic segment and the housing sector in developing economies. Growing urbanization in emerging economies is promoting the establishment of new residential buildings. Coupled with this, the increasing tendency of frequent interior renovations among the developing regions is expected to drive the market. Governments in developing countries are continually launching programmes to provide affordable housing and shelters to low-income groups, and consequently the electric fan's household application witnessed growth.

Additional factors driving growth include the increasing use of ceiling fans as a decorative appliance, growing demand for luxury ceiling fan products, and the rising number of product innovations. Growth is also driven by rising awareness regarding the benefits of ventilation in the household sector. This is also likely to be boosted by the ongoing COVID-19 pandemic and emergence of new virus variants, which have created demand for greater ventilation and many people minimizing frequenting of closed and air-conditioned spaces. Large-sized electric fans are an economically feasible option to ventilate a big space with many people, such as warehouses and factories, when compared to air conditioners.

The increased spending on premium home decor products is further propelling the demand for ceiling fans with new innovative features such as interchangeable blades and lighting fans, and smart fans with features such as voice control and connectivity access to tablets and smartphones. The increasing use of air conditioners, stringent procedures associated with the testing of fans and the threat from unorganized sectors could hamper the electric fan industry's growth. The proliferation of rooftop household solar power across developing countries will be a double-edged sword for the industry – while it could enable more homes to be electrified and contain electric fans (in particular, poorer households across Asia and Africa), it could also make more homeowners install more air conditioning as operational energy costs become negligible.

According to Euromonitor (2021), among the 'air treatment products' global market, cooling fans will show a higher CAGR in the next five years than in the previous five years. The segment is set to grow at close to 4%, which is higher than the growth for air conditioners (see Figure 13). Retail sales of 'cooling fans', which were at approximately 290 million units in 2019 and dipped to approximately 275 million in 2020, is set to recover in the next five years and reach close to 350 million by 2025.

Figure 13: Current (2020) and forecast sales growth of air treatment products globally by category ('000 units)



Source: Euromonitor International (2021).

GLOBAL EXPORT PLAYERS ARE FRAGMENTED AND THERE IS LITTLE DIFFERENTIATION

The electric fans market is highly fragmented, and the degree of fragmentation is expected accelerate in the next five years, according to industry forecasts.[4] Some of the major market participants are Bajaj Electricals Ltd, Crompton Greaves Consumer Electricals Ltd, Delta T LLC, Emerson Electric Co., Havells India Ltd, Hunter Fan Company, Orient Electric Ltd, Panasonic Corporation, Phillips Lighting, and Westinghouse Electric Company.

There is no vast difference between fan products offered by different companies. The fans come with more or less the same limited specifications. Vendors are increasingly focusing on innovating their products to improve performance efficiency, design, appearance and convenience offered by technologies. Manufacturers are also emphasizing the deployment of the internet of things (IoT) in modern electric fans, which can be controlled remotely through cloud computing technology.

To make the most of the opportunities, manufacturers would need to focus more on the growth prospects in the fast-growing segments, while maintaining positions in the slow-growing segments.

SHIFT FROM CONSUMER TO INDUSTRIAL FOCUS?

The challenge in the consumer (business-to-consumer) electric fans market is that it exhibits features of a commodity market – with little differentiation and tight price competition. Profit margins are not high, and costs of innovating are not necessarily rewarded by above average prices. Branding, which is expensive, is not always an option and could be too late in this relatively old market. It is likely that cheaper manufacturers will further dominate the market in the near future (e.g. Viet Nam and the Kingdom of Cambodia. The key to

4.– See https://www.bloomberg.com/press-releases/2020-10-02/electric-fans-market-will-showcase-negative-impact-during-2020-2024-demand-for-premium-appliances-to-boost-the-market-growth.

©ITC

greater success in the consumer electric fans market is to realize economies of scale as far as possible, in order to withstand the competition over prices and thin margins. Successful players tend to bigger firm units or at least enter into cooperation for integrating stages of production. The current overall strategy for many players around the world exporting electric fans for the consumer market is one of survival.

Therefore, seeking growth in the industrial and business-to-business (B2B) market (e.g. information technology hardware, automotive industry or production facilities) is required to survive in this industry. Further technical assessment and detailed analysis is required, and indeed recommended, before proceeding with specific segments. Applications and opportunities in electric fans in the B2B market can be wide-ranging – from musical instruments to logistics.

The sector has witnessed steady growth in recent years, and is receiving a new impetus due to changing environmental regulations and demand for e-mobility and other innovative and energy efficient solutions. While in automobiles, the shifts seen globally in greater technology embedding within vehicles, including digitalization and electrification, will influence the sector's future. In electric fans, the sector's highly price competitive nature and the development of value-added products, especially in the industrial segment, will influence the growth trajectory there.

ESTABLISHED NATIONAL SECTOR SEEKING STRENGTHENING AT HOME AND ABROAD

Pakistan's engineering goods sector is enjoying positive momentum with the combination of favourable policies and inherent production capabilities in both the focus product sectors of automobiles and electric fans. In the electric fans sector, several domestic firms have mastered production and sales for the domestic market, ably competing with imports, which signals their ability to compete internationally. Already, Pakistan-made electric fans have entered consumer markets in Asia and the Middle East, including the Republic of Iraq, the People's Republic of Bangladesh, the Sultanate of Oman, the United Arab Emirates and the Islamic Republic of Afghanistan, among others, and experts believe there is potential for branded products to perform well. In the automobile sector, Pakistani firms have been supplying parts and components to international firms and have also been manufacturing vehicles for the domestic market. This points to strong capabilities in the sector, and opportunities to strengthen exports. Pakistani automotive components as well as specific segments such as motorcycles and agricultural vehicles have also been growing in regional markets. Consequently, Pakistan's potential in both the automotive and electric fans subsectors lies in the proximity to regional markets – ranging from Middle East and North Africa to Sub-Saharan Africa. The large and growing market in Africa is a particular opportunity for Pakistani firms. The government's Look Africa policy initiative plans to double bilateral trade with Africa by 2025, and the increase in commercial diplomacy presence in key markets would support Pakistani engineering goods firms' market entry and growth in the dynamic African continent.

Meanwhile, Pakistan can leverage the United States Generalized System of Preferences (GSP) trade preferences to boost exports. The indicative trade potential for Pakistan to increase exports under the GSP is $2.4 billion, and the indicative potential for the Top 20 products is $2 billion. The United States is the largest consumer market for electric fans. It would be beneficial to use the GSP as a market entry tool and focus on non-traditional export goods that are GSP eligible and imported by the United States in substantial quantities.

©shutterstock

Pakistan has seen an increase in earnings of 17.71% from exports of engineering goods in the period of July–November (2020-21) in comparison to the same period in 2019-20, and an increase in the export of electric fans by 15.54%, growing from $8.69 million to $10.04 million. Yet, there has been a modest decrease in the export of transport equipment by 3.75%, from $4.90 million to $4.72 million.

Box 2: Ministry of Commerce's Look Africa policy initiative

Africa's total population is approximately 1.32 billion; i.e. 16.72% of the world's population, inhabiting 54 countries. Africa's growth rate in 2020 was 3.9%, although parts of the African continent have experienced much faster growth rates. Rising economies like the Federal Democratic Republic of Ethiopia, the Republic of Rwanda, the Republic of Côte d'Ivoire, the Republic of Senegal, the Republic of Benin, the Republic of Uganda and the Republic of Kenya are expected to grow by more than 6% in the next decade. These economies are also part of new Pan-African trade integration agreements that are likely to drive trade-led growth across the continent.

Pakistan's trade with Africa has remained stagnant at $3 billion per year in the last few years, but has now crossed the mark of $4 billion, and was $4.18 billion in 2019-20. The main reason for the low trade volume has been Pakistan's low level of engagement with Africa.

The Ministry of Commerce (MoC) launched the Look Africa policy initiative in August 2017, which has already been made operational and is reflective of broader policy towards Africa. To enhance connectivity between Africa and Pakistan, the Look Africa plan includes measures that can help boost trade between Pakistan and Africa.

Africa is moving towards economic integration through a number of subregional organizations. Under the Look Africa plan, Pakistan is seeking to negotiate preferential trade agreements with three African trading blocs. These blocs include:

- The Southern African Customs Union (SACU), comprising the Republic of Botswana, the Kingdom of Lesotho, the Republic of Namibia, the Republic of South Africa and the Kingdom of Eswatini;
- The East African Community (EAC), comprising the Republic of Burundi, Kenya, Rwanda, the Republic of South Sudan, the United Republic of Tanzania, and Uganda;
- The Economic Community of West African States (ECOWAS), which consists of Benin, Burkina Faso, the Republic of Cabo Verde, Côte d'Ivoire, the Republic of the Gambia, the Republic of Ghana, the Republic of Guinea, the Republic of Guinea-Bissau, the Republic of Liberia, the Republic of Mali, the Republic of the Niger, the Federal Republic of Nigeria, Senegal, the Republic of Sierra Leone, and the Togolese Republic.

Under this policy, African countries prioritized for trade promotion are Nigeria, Kenya, South Africa, the Kingdom of Morocco, Senegal, the People's Democratic Republic of Algeria, the Arab Republic of Egypt, the Republic of the Sudan, the United Republic of Tanzania, and Ethiopia, being Africa's Top 10 economies. These 10 countries comprise 78% of Africa's total gross domestic product (GDP) in 2017–18 (International Monetary Fund, 2017).

The highlights of the policy include:

- Granting accreditations, appointing trade development officers (TDOs) and opening six new commercial sections in Africa, including in Algeria, Egypt, Ethiopia, Senegal, the Sudan, and the United Republic of Tanzania in the first phase;
- Organization of Look Africa trade forums in major cities in Pakistan to create awareness among the private sector players;
- To initiate negotiations on bilateral and multilateral trade agreements for market access in Africa, formation of joint working groups on trade;
- Establishment of Africa Cell in the TDAP in Karachi;
- Special facilitation for delegations to and from Africa;
- Enhanced facilitation by the government for Pakistani companies' participation in trade fairs in Africa;
- A 2% additional duty drawback on selected items exports to Africa.

Source: Look Africa policy initiative. Available from https://www.commerce.gov.pk/look-africa-policy/.

Success in manufacturing for domestic market points to export potential

The automobiles subsector is considered the sixth-largest manufacturing sector in Pakistan, with an annual contribution of 2.8% to gross domestic product (GDP). Thus, it is vital to the economy.[5] To achieve 75% local content levels (as required by domestic policy vis-à-vis foreign investor manufacturers), automobile manufacturers started to look at local sourcing to provide auto parts manufacturers with technical assistance to ensure quality and uninterrupted supply chains. This led to the development of the auto vending industry. Major clusters are in Lahore and Karachi.

Pakistan's automobile sector comprises assembly and manufacturing units for production of cars (three units), tractors (eight units), trucks and buses (10 units), 4x4s (two units), light commercial vehicles (eight units) and two- and three-wheelers (113 units).[6]

The automobiles sector is a significant source of value added and employment, though its exports, both direct and indirect, have been modest. It has the dynamic potential to contribute to innovation and diversification through the development of manufacturing capabilities and cross-linkages with other industries. In addition to its indirect contributions to building Pakistan's industrial capacities, auto parts production, vehicle manufacturing and related activities have played a major role in driving the growth of manufacturing in Pakistan.

Pakistan's fan industry mainly deals with consumer fans that fall under the HS code 841451. Pakistan ranks 16th in world exports in terms of consumer fans (table, floor and roof fans, etc.). Although the electric fans sector has achieved only a limited level of localization, primarily due to lack of scale and appropriate policy support, there is both local and international demand in the sector. The sector has 5–6 large-scale companies that have a high level of investment, have modern equipment and conduct most of their operations in-house. The sector also has medium-sized firms that employ approximately 40–50 people, with the remaining firms (approximately 450) falling under the category of small and medium-sized enterprises (SMEs). While there is some production in Lahore and Karachi, 98% of production takes place in the clusters of Gujrat and Gujranwala. The industry employs up to 30,000 workers directly, and approximately 90,000 indirectly.[7]

Major importing countries of Pakistani electric fans are in traditional markets such as Asia and the Middle East. However, the domestic industry has recently penetrated Africa's non-traditional markets, but the value of the commodities traded remains limited.

AUTOMOBILES SECTOR

A number of factors drive the automobile sector's performance and potential

Historical factors have laid the foundation for the current automobile sector's growth. In 1972, nationalization of industries took place through the Economic Reform Order. The auto sector was reorganized under the Pakistan Automotive Corporation (PACO), and the Pakistan Tractor Corporation was formed for traders. The fast-paced environment of automotive manufacturing created a demand for auto parts and laid the foundation for the industry in Pakistan. A decade later, PACO invited private sector participation primarily to support the burgeoning auto parts manufacturing sector. This was made possible by allowing the manufacture of Japanese cars by assemblers in Pakistan on the condition of achieving 75% local content levels in five years. To achieve 75% local content levels, auto manufacturers started to look for local sourcing. They also started to provide auto parts manufacturers with technical assistance to ensure quality and uninterrupted supply, which led to the development of the automobile manufacturing industry.

Domestic production capacities, domestic demand and government policies have supported the evolution of the automobiles sector in Pakistan to a considerable extent. With appropriate incentive structures, scales of production and technological upgradation, Pakistan has the capability to manufacture products to progressively diversify its exports beyond existing products. Under the Automotive Development Policy, 2016-21 (ADP), new entrants are starting production in Pakistan, which will increase competition as well as the scale of operations for new and existing firms. In addition to its indirect contributions to building Pakistan's industrial capacities, auto parts production, vehicle manufacturing and related activities have played a major role in driving the growth of manufacturing in the country.

5.– Board of Investment. 'Sector profile: Automotive and Auto parts manufacturing'. Accessed at https://invest.gov.pk/automobiles#gallery.

6.– Automotive Development Policy, 2016-21.

7.– Trade Development Authority of Pakistan (TDAP). 'Engineering Division's Report on Fan Industry of Pakistan'.

Table 2: Strengths and competitive advantages in automobiles production

Natural assets and exogenous factors	Sector organization	Human and technology factors
• Established domestic vehicle manufacturing sector and domestic demand • Proximity to important export markets for vehicles and parts	• Established and growing industrial capacity in vehicles and parts production • Supportive government policy and planning, including the Automotive Development Policy, 2016-21	• Growing skill pool in sciences, technology and engineering • Collaboration with international firms that bring latest technology

Source: ITC generated.

ELECTRIC FANS

The domestic market demand has allowed electric fans producers to survive and thrive

By far, most of the output from the electric fans sector remains in the domestic market. While many fans are produced for export, the domestic market remains the most important source of demand. Approximately 90% of production caters to domestic demands. The key players are generally family run companies (e.g. GFC Fans, Yunas Fans, Pak Fans, Royal Fans, Starco Fans and Metro Fans).[8] The local consumer demands better quality and innovative designs compared to export products, which are of low margins. Most of the companies operate under locally created brands with only a few moving towards international branding.

Contribution of the clusters to the sector

The fan sector is a key SME sector of Pakistan with significant vertical linkages with other sectors of the economy. The sector is mature and well-established, with good infrastructural facilities.[9] The fan sector contributes to the national economy in multiple ways. It offers employment creation opportunities, income generation, foreign exchange and social development by strengthening cluster development in and around Gujrat and Gujranwala. This cluster offers the advantage of cutting the cost of production and complementarity of products. Moreover, the labour division network in the cluster positively stimulates the diffusion of knowledge and information in the local industry. It is estimated that the industry currently produces 17.5 million units, of which 63% are ceiling fans.[10] This is not significantly large, but there is a wide range of supporting industries such as plastic, aluminium casting, steel and various parts, etc. and, thus, potential reverberations in the economy are far greater.

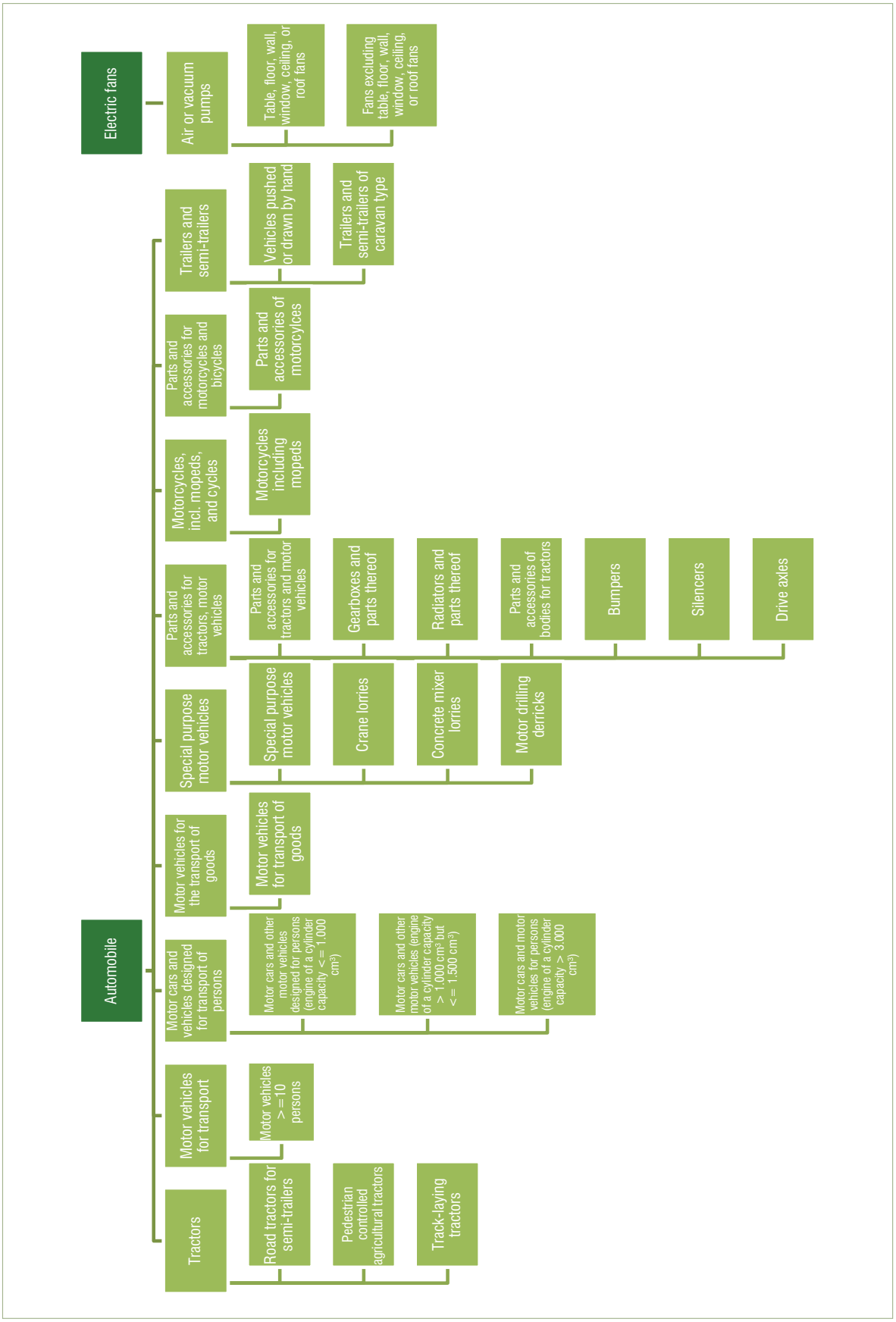
Changing patterns of demand and production in the global automobiles and electric fans sectors mean that Pakistani producers will need to adapt to succeed in international markets. At the same time, it is clear that there are many opportunities for both automobiles and electric fans manufacturers to supply new sources of demand, and Pakistani firms risk being left behind in future if they are not able to adapt. The sector will need to balance these considerations in charting the way forward for the sector.

8.– Kamal, M., Usman, Khan (2011). 'Fan Industry in Gujrat and Gujranwala: An SME Cluster Study'.
Accessed at https://docplayer.net/16676644-Dprc-working-paper-fan-industry-in-gujrat-gujranwala-an-sme-cluster-study.html.

9.– Small & Medium Enterprise Development Authority (2012). 'Cluster Profile: Electric Fans – Gujranwala'.
Accessed at https://smeda.org/phocadownload/Punjab/cluster_profiles/fan%20cluster%20-%20%20gujranwala.pdf.

10.– Punjab Skills Development Fund (2015). 'Upskilling Punjab's Fan Industry Cluster'.
Accessed at https://www.psdf.org.pk/wp-content/uploads/2018/11/FAN-Final.pdf.

Figure 14: Engineering goods product map



Source: ITC.

Export potential in both subsectors is yet to be realized

AUTOMOBILE

Falling production of automobiles

The automobile sector has remained in distress, with a massive fall in fiscal year 2020. The year 2019 began with a ban on non-filers, accompanied by an escalating exchange rate that kept the industry in turmoil. Resultantly, the year ended with massive fall in production. The year 2020 also witnessed new taxes, such as federal excise duty (FED), additional customs duty (ACD) and minimum value-added tax, while the exchange rate also kept escalating. The COVID-19 pandemic has also generated both demand and supply shocks across the global economy and has posed significant challenges for exports to increase further in coming months.

©shutterstock

Figure 15: Production of automobiles

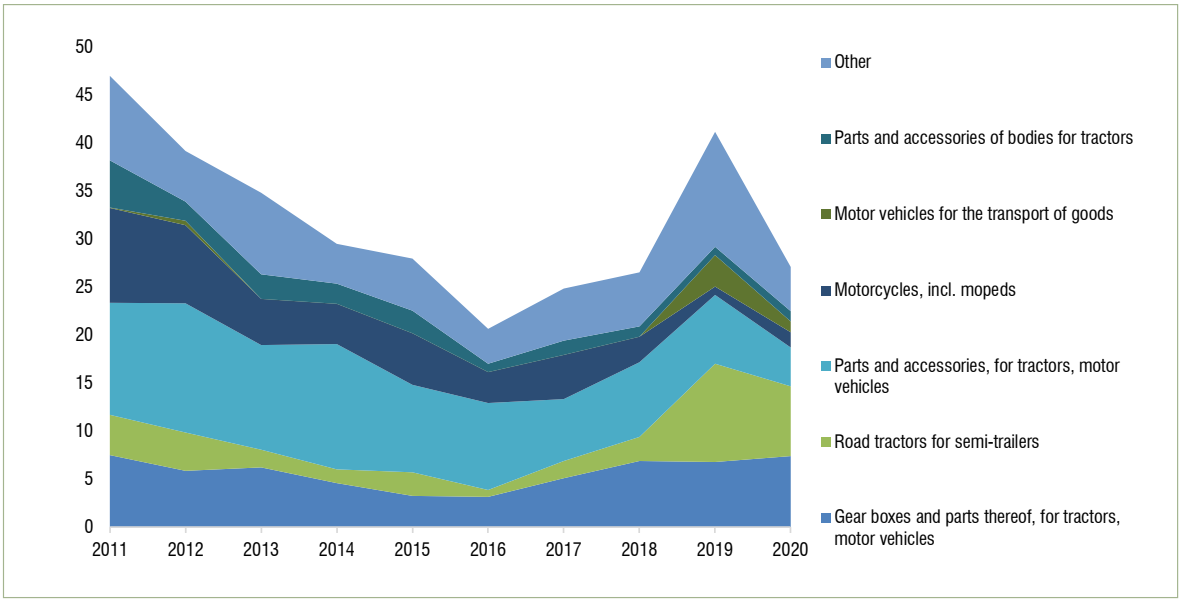
Category	Installed capacity	Number of units		
		2020-21 (July–March)	2019-20 (July–March)	% change
CAR	240 000	106 439	88 628	9.1
LIGHT COMMERCIAL VEHICLES	43 900	14 334	10 523	15.3
JEEP	5 000	8 178	3 290	42.6
BUS	5 000	445	462	–1.9
TRUCK	28 500	2 509	2 732	–4.3
TRACTOR	100 000	36 900	23 266	22.7
2/3 WHEELERS	2 500 000	1 439 535	1 177 296	10

Source: Pakistan Automotive Manufacturers Association.

Direct and indirect automobile exports make a modest contribution to Pakistan's total trade

Exports of automobiles and auto parts were worth $27.2 million in 2020, representing just 0.12% of Pakistan's exports (Figure 16). Most of these were destined for Kenya (13% of total exports), Italy (10.8% of total exports) or the United States (10.3% of total exports). Auto parts are also exported indirectly, primarily as components in finished vehicles. Exports of gearboxes for tractors and motor vehicles were worth $7.4 million in 2020, with exports destined for Italy (38.8%), the United Arab Emirates (14.5%) and Germany (13.3%). The overall export trend has been characterized by an uptick in recent years since 2016, but was adversely affected in 2020 due to the pandemic and associated economic challenges – ranging from production impacts to demand slumps.

Figure 16: Automobile and auto parts exports from Pakistan (2011-20) (USD million)

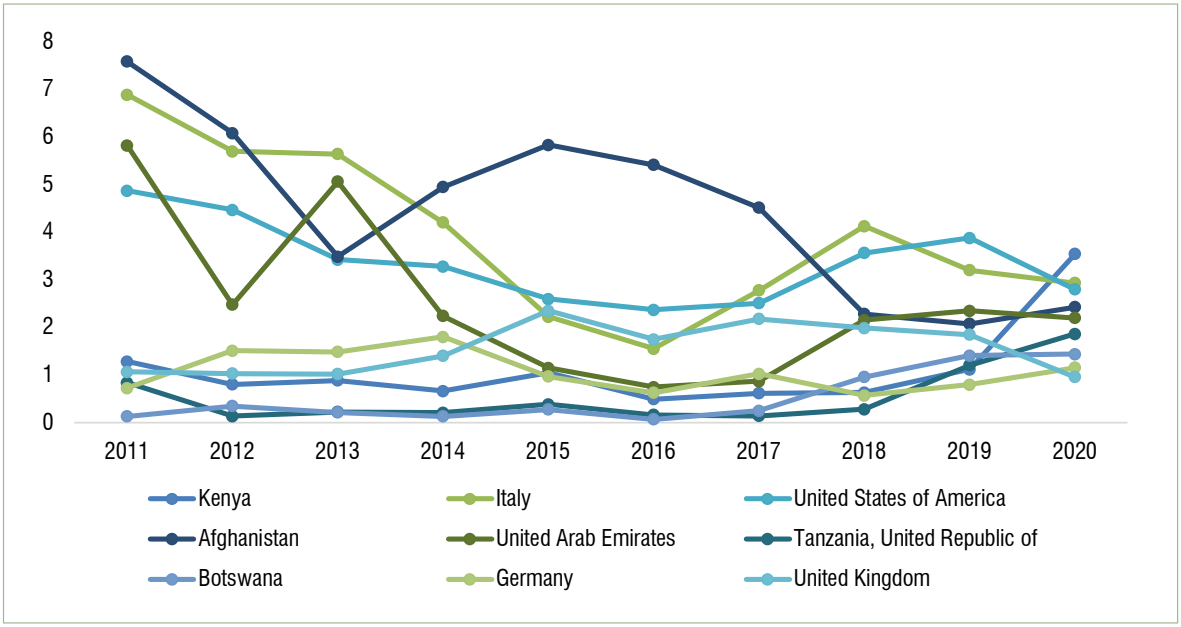


Source: ITC calculations based on UN Comtrade statistics.

Pakistan's automobile exports shifting to Africa

Exports of the selected Pakistani automobiles are concentrated in a limited number of markets, with only eight countries importing more than $1 million worth of goods in 2020. In 2011-20, Pakistan's exports gradually shifted from Europe and the United States to emerging economies of Africa (Kenya, Botswana, and the United Republic of Tanzania) (Figure 17). The Kenyan market emerged as the top destination, with exports worth $3.5 million in 2020 (increasing by 64% CAGR in 2016/20). Exports to the African market account for almost 38.4% of the total exports from Pakistan.

Figure 17: Major destinations for automobiles exports from Pakistan (2011-20) (USD million)

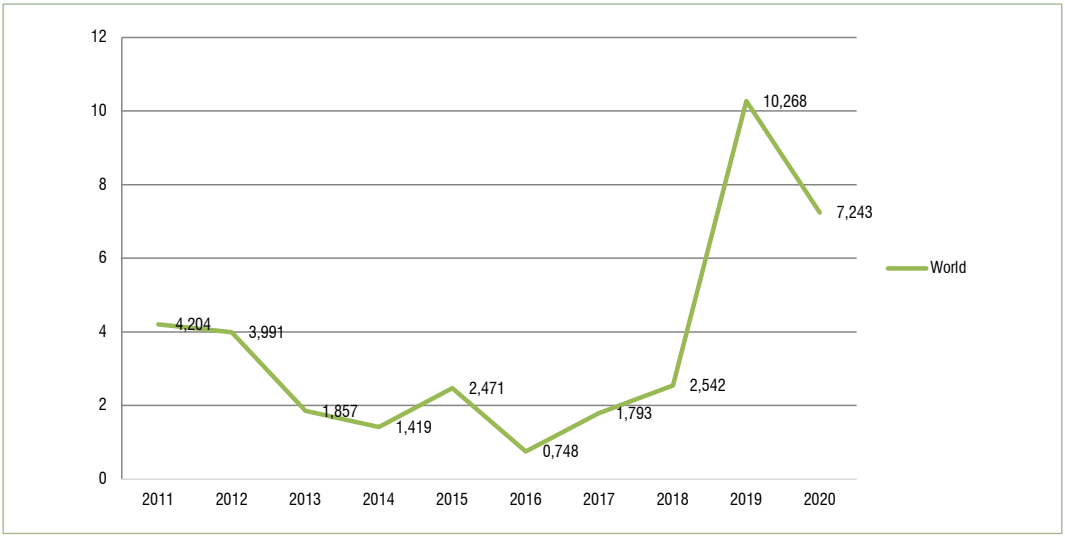


Source: ITC calculations based on UN Comtrade statistics.

Road tractors for semi-trailers make up the most exports

Road tractors for semi-trailers represent the highest share in exports from Pakistan in the automobiles sector (27.3% of total exports). Total exports in 2020 accounted for $7.2 million (Figure 18). Exports are mainly to Africa, which aggregated to 80.3%. The top importing countries are Kenya (21.2%), Botswana (19.8%), Togo (12.6) and South Africa (9%).

Figure 18: Pakistan exports of road tractors for semi-trailers (2011-20) (USD million)



Source: ITC calculations based on UN Comtrade statistics.

ELECTRIC FAN

Domestic capabilities must now upgrade to compete in export markets

The electric fan industry is mainly clustered in four major cities, namely Gujrat, Gujranwala, Lahore and Karachi, with 98% of production centred in the first two locations. The sector comprises approximately 500 SMEs.

Fans that consume less than 125 watts of energy are generally referred to as consumer fans (SITC 74341; HS 8414.51). Fans that consume more than 125 watts are classified as industrial fans (SITC 74343; HS 8414.59). Pakistan's fan industry mainly deals in consumer fans. Exports of electric fans, including table and floor fans, were just $24.9 million in 2020, which is a decline from a high of $38 million in 2014. Of this, approximately 45% of exports comprise ceiling fans, with approximately 30% for pedestal fans, 20% for table fans and 5% for exhaust fans. The sector, which has the potential for high growth levels, is suffering from low levels of productivity, inadequate technology upgrade and shortage of skilled staff, in addition to the very tight global price competition in a market dominated by China. The industry also requires testing and certifications, as global conditions on safety and energy efficiency are heightened.

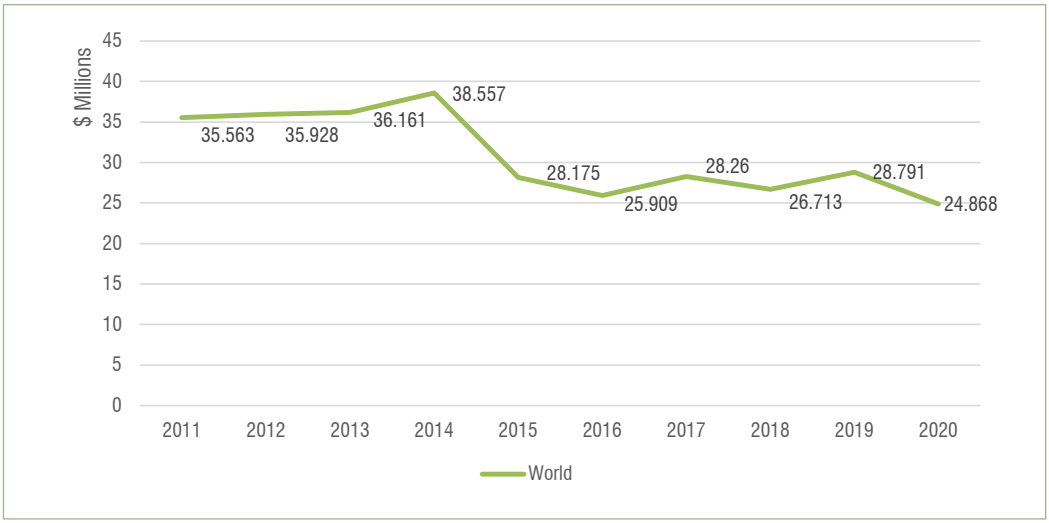
Exports are concentrated in low-income countries

Pakistan's exports are concentrated in lower-income markets, such as Iraq (21.1% of total exports) or Bangladesh (16.7% of total exports), followed by the United Arab Emirates, the Kingdom of Saudi Arabia, and the Republic of Yemen. The United States (35.3%) is the largest importer of table, floor or ceiling fans, followed by Japan (5.3%) and Germany (4%). However, Pakistan has been unable to export to any of the top destinations. Some reasons for this include a lack of international certification and inefficient in-house testing capacity to produce fan units compliant with export markets.[11] Figure 20 highlights Pakistan's top electric fans export countries.

The average export price of fans made in Gujrat and Gujranwala is $23–$25, which is much lower than some of the more sophisticated fans, which sell for approximately $400–$500. The retail price of Pakistani fans in its export markets is approximately $32–$35.

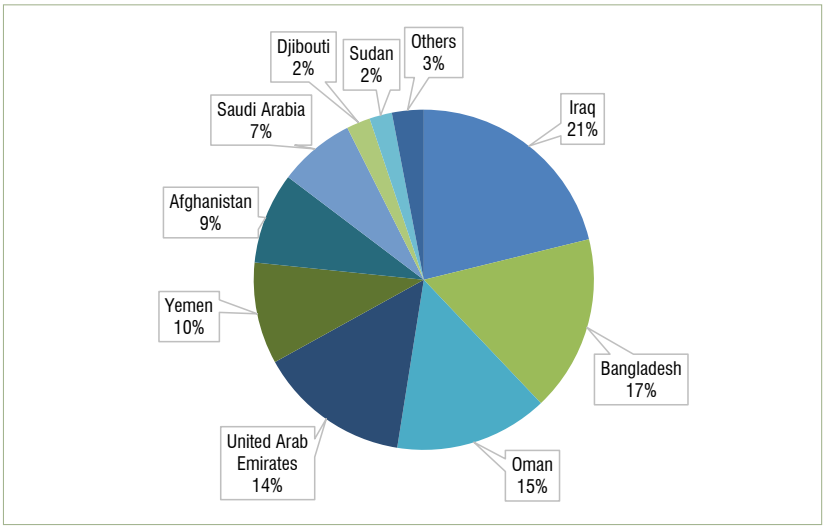
11.– Pakistan Institute of Trade and Development (PITAD). Sector brief in fan industry. Accessed at http://www.indiapakistantrade.org/pdf/Trade of Industrial Goods with India Opportunities and challenges for Pakistan.pdf.

Figure 19: Exports of consumer electric fans from Pakistan (USD million)



Source: ITC calculations based on UN Comtrade statistics.

Figure 20: Importing market of electric fans products exported from Pakistan (2020)

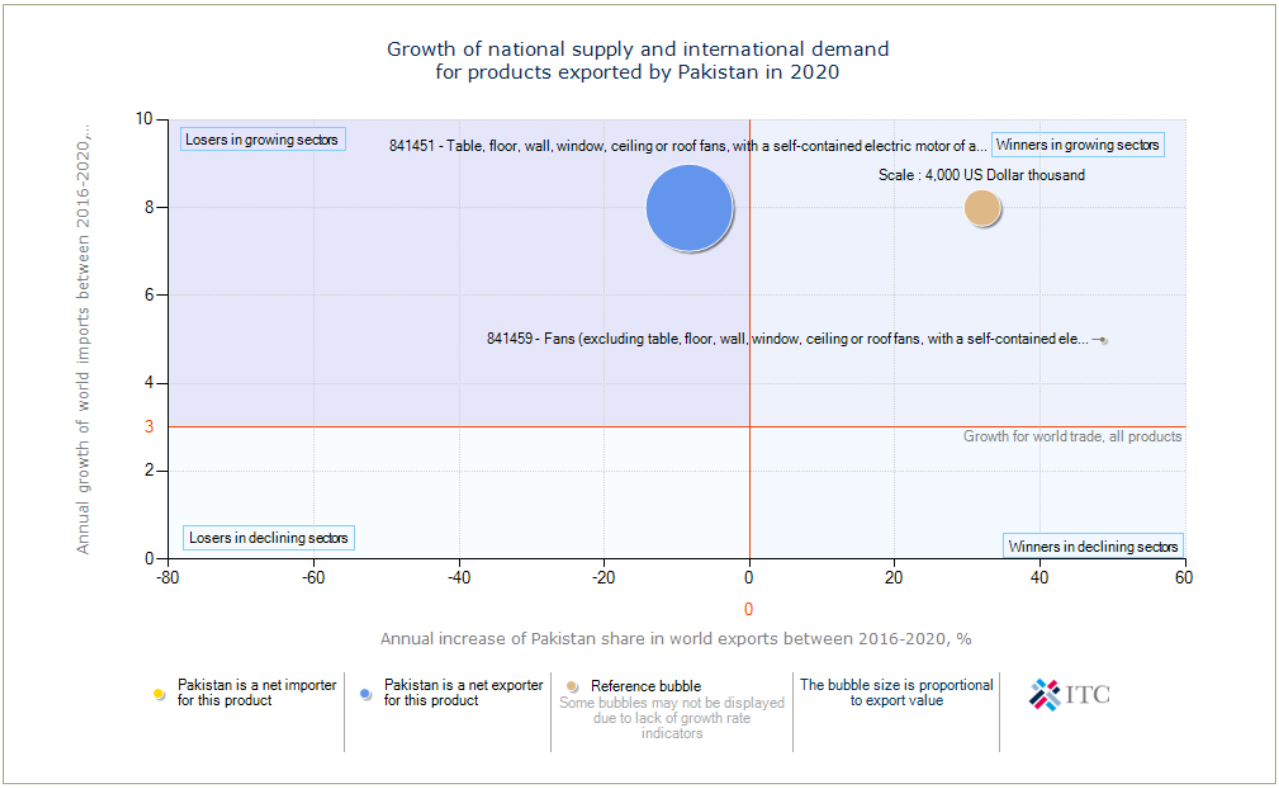


Source: ITC calculations based on UN Comtrade statistics, January 2020.

The trade complementarity matrix in Figure 21 shows that the electric fans export concentration is classified as the one for which global demand is high, while Pakistan falls behind in catering to the exports of these products, which are in high demand globally.

Pakistan's engineering goods (automobiles and electric fans) sector has grown over the years, benefitting from this market and supportive policies and skills, though its contribution to exporting has been limited. Expanding the sector through trade will, therefore, require the sector to identify opportunities to build on these strengths.

Figure 21: Growth of national supply and demand for electric fans exported by Pakistan (2020)



Source: ITC calculations based on UN Comtrade statistics.

Investment inflows remain steady and growing

While investment data for the overall engineering goods sector is hard to come by, data on FDI into the manufacturing of motor vehicles, trailers and semi-trailers sector is available via the ITC Investment Map database. Accordingly, FDI in this subsector has averaged $30 million annually, and peaked at $113 million in 2019, the latest year for which data is available. Japan was the source of the highest FDI, consistently throughout this period, reaching nearly 98% of all FDI by 2019 ($98 million). Major Japanese brands like Nissan, Suzuki, Honda and Toyota, etc. have some form of presence in Pakistan. Announcing an automotive development policy has helped provide policy consistency and predictability for investors, with opportunity for mid-term review to enable emerging developments. Under the policy, new entrants are encouraged to set up manufacturing facilities in Pakistan, and notably, electric vehicle manufacturing is also recognized and welcomed.

While FDI data for the electric fans sector specifically is not recorded or published, the overall electrical equipment manufacturing sector has seen a sharp rise in recent years, exceeding $164 million in 2019, but the average for the decade was less than $10 million. Meanwhile, the consumer electronics sector received $42 million FDI in 2019.

FDI inflows into the engineering goods sector appear to be steadily growing, but remain tepid compared to other sectors in Pakistan and also compared to Pakistan's competitors. Focus should be on: i) assessing at a more disaggregate level the investment flows for each subsector; ii) understanding the motivations of existing investors, to inform future FDI strategies; and iii) embark on a focused programme to attract FDI (discussed more in the PoA).

VALUE CHAIN AND COMPETITIVENESS DIAGNOSTIC

Value chain mapping

The value chain schematic for the automotive sector and electric fans sector are provided in Figure 22 and Figure 23 respectively. A brief description of the different stages in automotive and electric fans is given below.

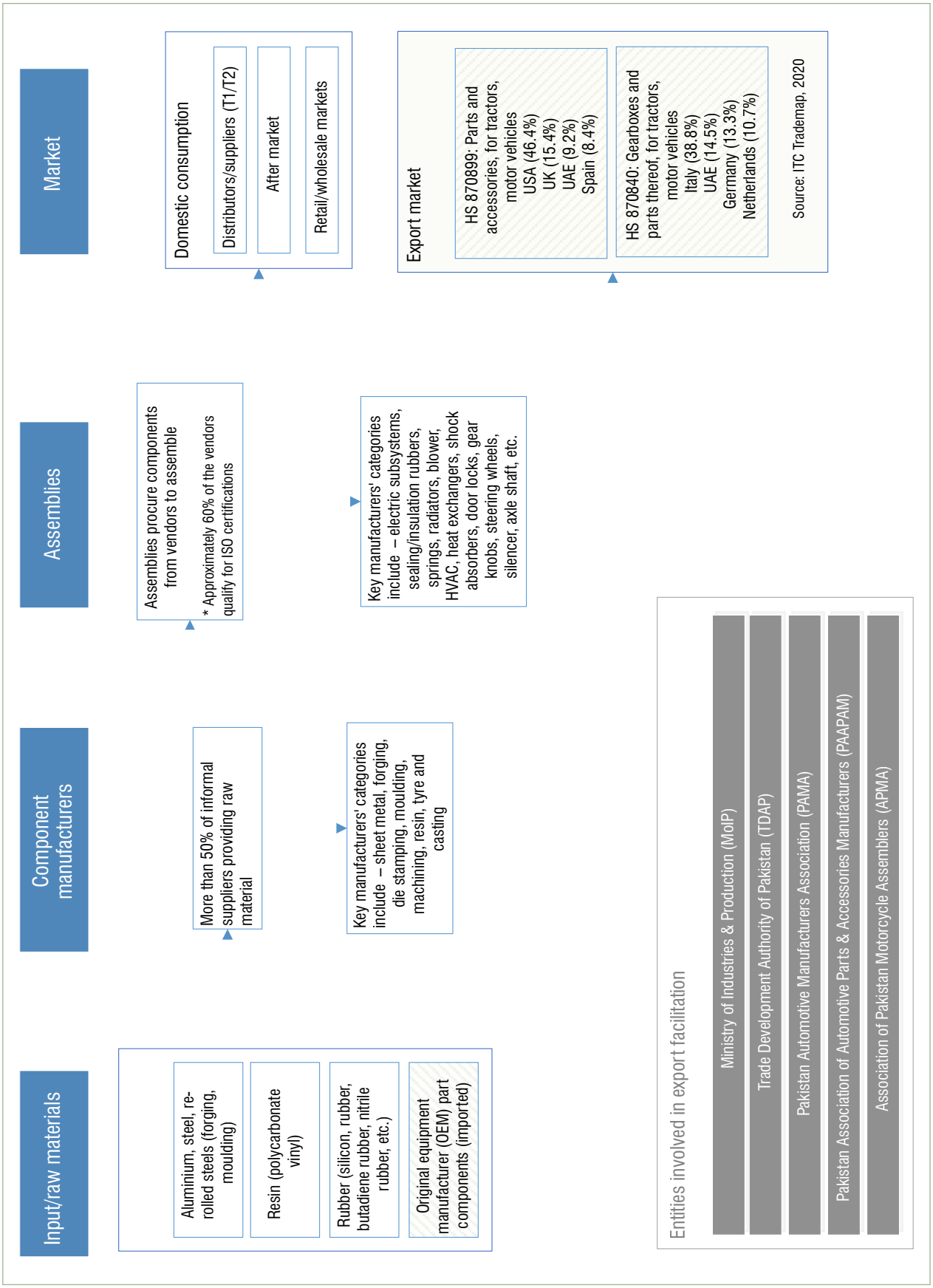
Automotive

- Inputs: The inputs and raw materials for the sector include aluminium, steel, re-rolled steel (and players in this part of the value chain engage in forging and moulding), resins like polycarbonate vinyl, rubber (silicone, butadiene, nitrile), and imports of original equipment manufacturer parts and components required for production. It is estimated that more than half of the raw material input suppliers are in the organized sector, and the majority of raw materials are imported (with some processing done locally).
- Components: Components manufacturers in the sector engage in sheet metal, forging, die stamping, high-pressure aluminium die casting and gravity casting moulding, machining, resin, tyre and casting.
- Assembly: In the assembly stage, there are domestic assemblies that procure components from vendors and manufacturers, including electrical subsystems, sealing/insulation rubbers, springs, radiators, springs, chassis and body parts, fuel tanks, oil sumps, oil pans, window regulators, crossmembers, scissor jacks, blower heating, ventilation and air conditioning (HVAC), heat exchangers, shock absorbers, door locks, gear knobs, steering wheels, silencers and axel shafts, etc.
- Final products sales/distribution: The final products are sold domestically (approximately 60% of total production) and exported (approximately 40%), but this split is rapidly changing following new policies to encourage greater domestic manufacturing to serve as import substitution. Since the strategy is interested in exports primarily, it is worth noting that the key markets are the United States, the Kingdom of Spain, the United Kingdom and the United Arab Emirates for HS 870899, and Italy, the Kingdom of the Netherlands, Germany and the United States for HS 870840. The national institutions supporting export facilitation include the TDAP, Pakistan Automotive Manufacturers Association (PAMA), the Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM), the Association of Pakistan Motorcycle Assemblers (APMA) and the Ministry of Industries & Production (MoIP).

Electric fans

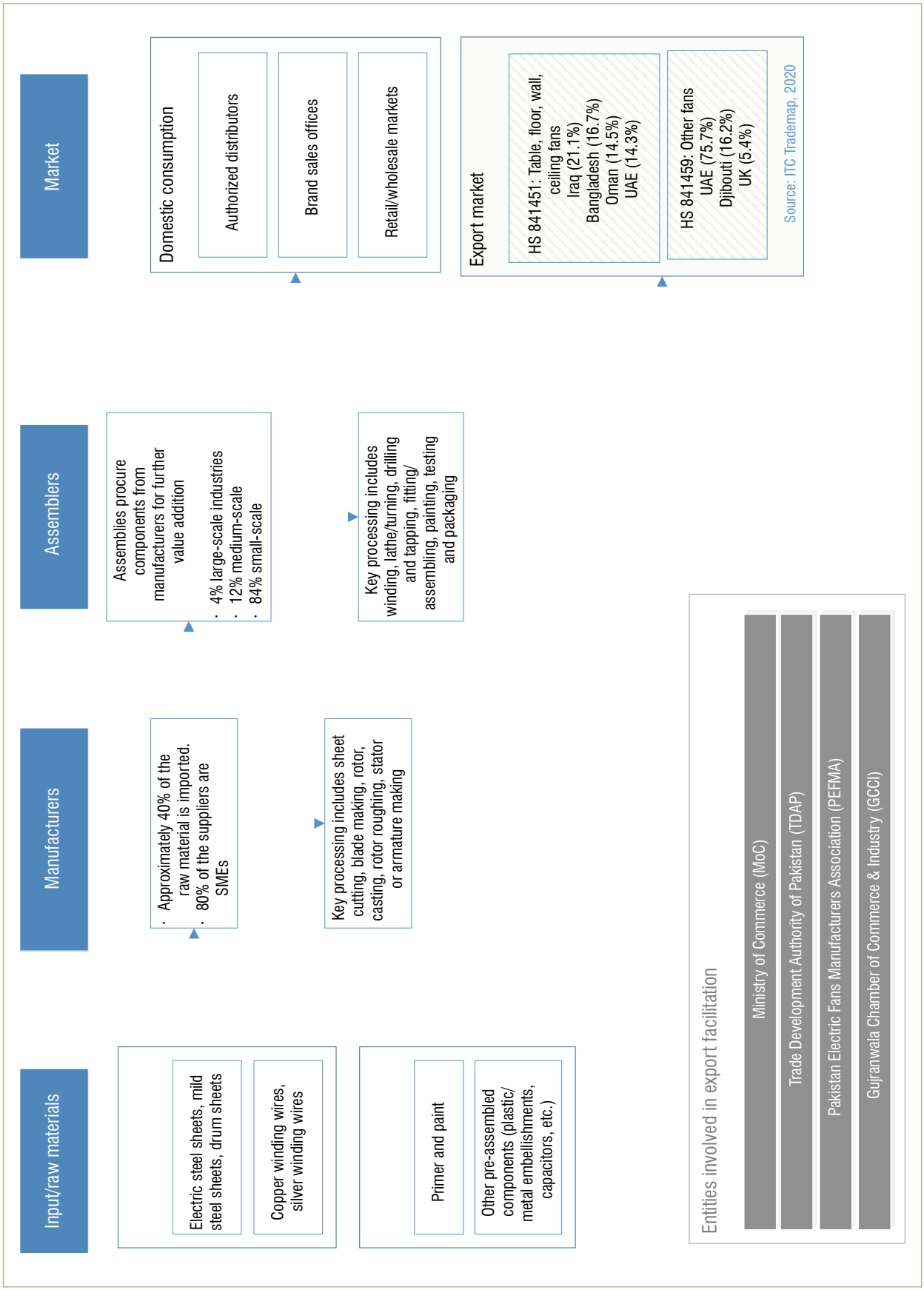
- Inputs: The inputs and raw materials for the sector include electric steel sheets, mild steel sheets and drum sheets, as well as copper winding wires and silver winding wires. Additionally, primers and paints and other pre-assembled components such as plastic or metal embellishments, and capacitors. The majority of raw materials (more than 50%) is imported, and most input suppliers are SMEs. Some import substitution has taken place for input components.
- Intermediate manufacturing: In the intermediate manufacturing stage, key processes include sheet cutting, blade making, aluminium casting, rotor casting, rotor roughing, and stator and armature making.
- Assembly of final products: At the assembly stage, assemblies procure components from manufacturers and engage in processes such as winding, lathe/turning, drilling and tapping, fitting/assembling, painting, testing and packaging. It is estimated that most players in this sector (84%) are small-scale enterprises, while approximately 12% are medium scale and only 4% are large scale.
- Final products sales/distribution: The distribution/sales are primarily in the domestic market (more than 80%) and some exports (less than 20% currently, but it used to be higher). The main export markets are Bangladesh, Iraq, Oman and the United Arab Emirates for HS 841451, and Saudi Arabia, Japan, the Democratic Socialist Republic of Sri Lanka, and Malaysia for HS 84149. The key institutions with a role for export facilitation in the sector include the Gujranwala Chamber of Commerce & Industry (GCCI), the TDAP, Pakistan Electric Fans Manufacturers Association (PEFMA) and MoC.

Figure 22: Value chain map for automotive sector



Source: ITC.

Figure 23: Value chain map for electric fan sector



Source: ITC.

INSTITUTIONAL AND POLICY SUPPORT

The key national policy relevant to the automotive sector is the Automotive Development Policy 2016-21, which was renewed to 2021-26 and is currently in implementation. The policy allowed multiple automotive firms to secure greenfield status, facilitated diversification of the sector and fostering greater consumer choice in the passenger vehicles category. The re-enacted policy (June 2021) aims to facilitate higher volumes of production, encourage more investment, enhance competitiveness and improve quality with adoption of the latest technology. Another key objective is to create a better balance between industrial growth and the tariff structure, and also to ensure consumer welfare. An important goal in articulating such a policy has been to provide policy consistency and predictability for investors, with opportunity for mid-term review to enable emerging developments. Under the policy, new entrants are encouraged to set up manufacturing facilities in Pakistan, and notably, electric vehicle manufacturing is also recognized and welcomed. In the latest budget (2021-22), the government took steps to encourage domestic vehicle manufacture, through a series of policy measures. Various taxes and duties were reduced for locally manufactured cars, and in particular, the sales tax on locally manufactured electric vehicles of less than 50 kWh was reduced from 17% to 1%. The Electric Vehicles Policy 2020-2025, enacted in 2020, sets out a goal to have a 30% share of electric vehicles among passenger vehicles and heavy-duty trucks by 2020 and 90% by 2040. This has triggered a positive sentiment in consumers towards the purchase of electric vehicles and a consequent increase in imports. The budget (2021-22) also introduced 0% duties/taxes on import of electric vehicle-related machinery and equipment.

In order to improve on time delivery – and thereby overall performance – of domestically manufactured vehicles, the government also introduced strong penalties for delivery delays (a compulsory payment for delays of more than 60 days, and maximum upfront payment not exceeding 20% of the vehicle's cost).

With the introduction and approval of the Electric Vehicles Policy 2020-2025, it is observed that many new entrants are exploring the avenues of vehicles running on renewable energy. The following developments can be observed in this regard:

- Sazgar Engineering Works Limited introduced electric three-wheelers;
- Jolta Electric introduced electric motorcycles and are receiving a good market response;
- MG Motor announced the bookings of their plug-in hybrid sub-compact SUV MG-ZS electric vehicle.

A notable regulation relevant to the electric fans sector came in 2015, where an Import Policy Order introduced regulations that stated the import of electric wires must be in compliance with Pakistan Standards and Quality Control Authority (PSQCA) standards. Meanwhile, a new Export Policy Order in 2020 stipulated more documentary compliance than earlier, and it is seen to be more relevant for larger-scale manufacturers and exporters, because since SME manufacturers tend to operate more informally and avoid documentary compliance.

A key institution relevant to this sector is the Engineering Development Board (EDB), under the Ministry of Industries & Production. It exists to develop and promote Pakistan's local engineering sector, with a vision to make Pakistan a world-class exporter of engineering goods and services by 2025. Some key objectives include:

- Enhance value-added manufacturing among the local engineering industry;
- Promote product standardization to the local industry as a prerequisite for export enhancement;
- Promote the industry as a hub for subcontracting;
- Promote business development and networking with foreign investors that seek technical collaboration with Pakistani companies.

One of the most interesting recent developments in the policy and regulatory landscape is in relation to the government's electric vehicle policy. The Automotive Industry Development and Export Plan (AIDEP) 2021-26 is in effect since 29 December 2021. It has created a significant rise in the level of imports for hybrid electric vehicles and electronic vehicles as completely built up (CBU) vehicles, creating challenges on the country's trade balance. In order to tackle this, the Ministry of Industries & Production (MoIP) has given recommendations to increase the rate of regulatory duties on imports of CBUs for hybrid electric vehicles and electric vehicles. Below are the policy recommendations and rationale behind each.

- Imposition of 50% R&D tax on the import of CBU electric vehicles with battery packs of more than 50 kWh. Rationale: Due to a decrease in customs duties, the import of high-end electric vehicles has increased, expanding the current account deficit as well. The R&D tax is to be increased to discourage the import of CBU electric vehicles.
- R&D tax on hybrid electric vehicles to be increased from 15% to 50%. The increase will be applicable to vehicles with an engine capacity of 1.5 litres to 1.8 litres. Rationale: The intervention will enable the

©shutterstock

improvement of the current deficit and will encourage the local assembly of hybrid electric vehicles in Pakistan.

- The R&D tax on internal combustion engine vehicles to be increased from 15% to 50% as well. Rationale: The intervention will enable the improvement of the current deficit and will encourage the local assembly of all the vehicles in Pakistan.
- Federal excise duty on locally assembled vehicles with an engine capacity of more than 1.5 litres is to be increased from 5% to 10%. Similarly, the federal excise duty on local CBU vehicles with an engine capacity of 1.5 litres to 1.8 litres is to be increased from 5% to 10%. Rationale: The increase will be temporary to deal with the ongoing financial crunch.

The imports of high-end CBU electric vehicles increased significantly in the last few months, which implies that the government might have to go back and reassess the electric vehicles policy.

Overview of key institutions

Some of the key industry stakeholders/institutions, alongside their capability to support sector development and influence policies and programmes for it, are presented in Table 3, which are based on stakeholders' perspectives and feedback. According to stakeholders, most institutions are scored at a level 'moderate' (2) across the criteria of resources, capability and influence. Stakeholders perceive the Ministry of Commerce's influence over the engineering goods sector to be strong, while resources and capacity remain moderate. Meanwhile, they perceive TDAP's resources to support the sector as strong, although capacity and influence are perceived to be moderate. The role that these two key trade-related bodies play in the sector could still be relatively nascent and underdeveloped compared to the dedicated body for the sector (EDB). Meanwhile, Pakistan Engineering Council's influence on sector development is rated poorly, even as it has had a role in improving skills and talent that shapes the industry. The key private sector bodies are all moderately scored at 2, and none were seen as 'excelling'. Focusing on strengthening the apex state institutions, as well as strengthening the apex industry associations, are equally important in driving holistic growth in the sector. For example, improving TDAP's capabilities to analyse market trends and provide effective trade intelligence to firms in the sector (included as an activity in the PoA). Having robust, well-structured and inclusively represented industry associations to effectively dialogue with state institutions helps improve the quality of discussions and solutions sought and received.

Interestingly, the Fan Development Institute based in Gujrat (set up in 2005) and set up jointly by the Ministry of Science and Technology at the time and the industry body, Pakistan Electric Fan Manufacturers Association (PEFMA), did not feature prominently in the consultations. Although it previously played a role in training workers for the fan manufacturing industry, the current state is perhaps due to the lack of modernization of the institute and industry players doubting its relevance. It would be useful to relook at the institute's role, relevance and resources in supporting the workforce development orientation for the sector.

Table 3: Assessment of institutions relevant to the sector

Name of institution	Type of institution[A]	Role played by the institution[B]	Capability check		
			Resources[C]	Capacity[D]	Influence[E]
Ministry of Commerce	A	Responsible for trade- and commerce-related policymaking at national level	2	2	1
Engineering Development Board	B	Responsible for evaluating and recommending policies pertinent to engineering goods and governs the technical committee	2	2	2
Pakistan Engineering Council	B	Responsible for designing and regulating the engineering curriculum and governs the accreditation and licences for contractors and manufacturers	2	2	3
Trade Development Authority of Pakistan	B	Responsible for promoting Pakistan's trade and commerce and enhancing the country's trade potential	1	2	2
Pakistan Electric Fan Manufacturers Association	C	A joint traders association for traders in electric fans manufacturing	2	2	2
Pakistan Association of Automotive Parts & Accessories Manufacturers	C	A joint traders association for traders in automotive parts and accessories manufacturing	2	2	2
Pakistan Automotive Manufacturers Association	C	A joint traders association for traders in automotive assembly, sales and distribution	2	2	2
Pakistan Council of Scientific & Industrial Research (PCSIR)	B	An entity that provides quality testing services and is governed by the Ministry of Science & Technology. Responsible for conducting analytical tests for various products and materials through a network of laboratories across Pakistan	2	2	2

Source: ITC, based on stakeholder consultations.

Note:

1. A) Public sector ministry ; B) Public sector specialized agency / statutory body ; C) Private sector chamber or trade association ; D) Private sector support service provider ; C) Donor agency / aid project ; D) Other.

2. How well financially resourced to support sector development needs : 1. Very well resourced ; 2. Somewhat well resourced ; 3. Poorly resourced.

3. Capacities in the institution to support sector development needs : 1. High capacity ; 2. Moderate capacity ; 3. Low capacity.

4. How influential is this institution to drive sector development : 1. Very influential ; 2. Somewhat influential ; 3. Not influential.

Competitiveness constraints

To remain realistic and resource-efficient, this strategy will not be able to focus on all the issues affecting the value chain. An informed selection of the most important issues was made. To assess relative importance, criteria used are the level of disturbance (perceived by national stakeholders) and the ease of resolution (both in terms of cost and time involved).

Table 4: Longlist of competitiveness constraints

Constraints	Root causes	Ease of resolution (Grade 1-5; 5- very urgent)	Urgent action needed (Grade 1-5; 5- very urgent)
Supply level			
Limitations in sourcing of reliable, quality and cost-effective raw material	• COVID-19-induced supply chain difficulties; • Persistent shortages of raw materials; • Increasing prices and fluctuations in prices of raw materials; • Monopoly behaviour by local raw material suppliers, especially in sheet metal and carbon/alloy steel shaft; • High import duties on steel due to domestic state-owned enterprise protection; • Long transit times for raw materials and other inputs from Europe and China; • Price, quality and availability of carbon and alloy steels for the forging industry; • Cumbersome customs procedures for import of raw materials and other inputs for use in exports; • International suppliers placing low trust when contacted over phone for procurement of raw materials.	4	5
Production/manufacturing/processing level			
Inadequate skilled labour	• Limited trained workforce coming out of technical and vocational education training (TVET) institutions to suffice industry quality requirements; • Institutions set up for dedicated training (e.g. Fan Development Institute) now under-resourced and lacking capacity; • Higher-end skills lacking to drive new trends in the automotive sector.	4	4
Insufficient technology upgrading of the domestic industry	• Little to no transfer of technology from international players (for example, because no engine is manufactured locally, only assembled).	5	3
Inadequate R&D and product innovation	• Component design as a subject needs to be offered in engineering universities; • Little in-house R&D spending; • Limited industry research engagement; • Limited collaborative interaction with buyers/customers in order to expand product pipeline and co-create new products.	3	5
Market access level			
Limited market intelligence to drive export marketing	• Limited referencing of import data of potential countries in Africa and South America.	2	4
Improve market penetration	• Limited focus on compliance with certification requirements in foreign countries to where goods are being exported; • Need to negotiate favourable tariffs applicable to Pakistani products in African countries.	4	5

Source: ITC.

Deeper discussion of selected priority issues

SUPPLY LEVEL

Sourcing quality raw materials at the right price

- Industry stakeholders face challenges accessing raw materials like electrical steel sheets and mild steel sheets. These raw materials are primarily imported and distributed by local firms. Since a large supplier base of raw materials belongs to SMEs and the informal sector, there is no direct monitoring of quality standards and controls for these firms. Stakeholders note that many local suppliers are not ISO certified and, therefore, their manufacturing has a lot of quality inconsistencies.
- Some SMEs and all large-scale enterprises have obtained Pakistan Standards and Quality Control Authority (PSQCA) certification, but most SMEs do not comply with the quality standards and do not have rigorous quality testing procedures. Ensuring consistency in quality by local suppliers can significantly reduce the import dependency of raw materials.
- In the past 2-3 years, the fluctuating rupee to dollar parity has dented cash flows, coupled with the higher duties/tariffs compared to international markets on raw material procurement. A suggested solution is to lower the effective duty and tax rates for the entire industry's value chain, and avoid cases of double taxation.
- The current customs clearance procedure has layers of multiple manual submissions and approvals. There is no one-window solution yet that could minimize these tedious workflows. Due to this, more time is consumed and dedicated resources need to be hired for these services (international sales agents/experts).
- Some industry stakeholders note that the majority of vendors in the automotive industry are generally reluctant to obtain international accreditation on quality controls and this often affects some product manufactures' ability to export to international markets. The first step towards manufacturing a competent product will be to implement strict quality controls and procedures.
- COVID-19 has also imposed additional burdens on the sourcing of affordable inputs, and, in mid-2021, the industry sought a reduction in the regulatory duty on electrical steel sheet imports, as the industry battles with expensive inputs and loss in sales amid the pandemic (see Box 3).

Enhancing skilled and qualified labour

- Labour in the engineering goods sector is mostly trained on the job, and there are few formal training programmes to develop skills for the sector in a sustainable manner. Many firms struggle to find professional candidates, and this eventually affects output in the sector. The majority of the labour force is not professionally qualified, and professional skill development programmes are not within reach of the masses. The informal sector mostly employs unskilled labour, which makes their productivity low. Availability of skilled labour can transform the sector greatly in terms of capacity building and labour productivity.
- Vocational training does not have specialized courses catering to this sector. While technical and vocational training institutes play a vital role in providing skilled labour to industries, there is no certification specifically tailored for specific sectoral needs (e.g. for the electric fans sector). A specialized vocational training programme can rectify the shortage of skilled labour in the sector.
- There are issues in provincial economies too. In Balochistan, for example, there have been cases of engineer joblessness among educated youth. The Pakistan Engineering Council (PEC) issued 12,000 supervisory certificates in 2018 to help employ engineers, but it had limited impact. Allegedly, private companies bought supervisory certificates and certificate holders transferred these in exchange for money. Meanwhile, gaps in the skilled and semi-skilled labour market remain a key priority issue in Sindh, Balochistan and Khyber Pakhtunkhwa. Current exporters explained that the technical and vocational education training (TVET) institutes need to respond to local manufacturers' needs.

Electricity costs and reliability

- Electricity costs accounts for approximately 30% and 40% of the production costs for electric fans and automotive respectively. Industry players noted that electricity costs are not competitive with competitors and the cost of power and power outages was a key issue. It is estimated that, while the headline cost of electricity is $0.15 per kWh, it increases to $0.19–$0.21 per kWh when considering power outages and line losses. The competitors

Box 3: COVID-19 puts additional pressures on electric fan producers

Increasing prices of basic raw materials needed for the production of electrical fans have significantly raised manufacturers' costs and brought upward pressure on retail market rates across the country. The industry also faces a shortage of raw materials (e.g. electrical steel sheets, copper, aluminium and some plastic items) in the domestic market. Fan manufacturers stated that this, along with poor sales owing to buying' shrinking buying powers amid the pandemic, is leading to production cuts. Based mainly in Gujrat and partially in Gujranwala, there are 150-200 small to medium-sized electric fan manufacturing units, with their component suppliers also spread in the two cities. 'The raw material market is quite volatile for the last six to eight months due to the prices of electrical steel sheet, the most important material of a fan, with rates going up to $1,200–$1,400 per ton,' a manufacturer said. 'Scrap, which is the second major source of getting steel for fan manufacturers, is hardly available, as it is being exported to China,' he said. 'The fan industry been demanding the imposition of duty on the export of scrap to China so that the local industry has access to cheaper raw material', said Muhammad Waqas, an electrical fan manufacturer. 'Rates of raw materials are increasing on a daily basis, causing price volatility in the market amid lower sales', he added. Ali Usman, former chairman of the Pakistan Electric Fan Manufacturers Association (PEFMA), said prices of raw materials have doubled in the last six months. 'The daily fluctuation in the rates of raw material is causing unprecedented problems for the manufacturers in coping with the situation at a time when the market is already facing tough circumstances due to the pandemic,' he said. 'Likewise, the export sector of the fan industry is also facing the issue of fixation of prices in the global market,' Mr Usman added. An exporter said imposition of duty on the export of scrap to China as well as reduction in the regulatory duty on the import of electrical steel sheets might decrease the intensity of the issue and steer the local industry out of a difficult situation. Manufacturers in the country produce ceiling and pedestal fans, with the former mostly being procured by domestic buyers. Pedestal fans made in Pakistan are currently being exported to Bangladesh, Afghanistan and Middle Eastern countries such as Saudi Arabia, the United Arab Emirates, Yemen and Iraq. The country's fan exports have been negatively affected in the last few years owing to the wars in Yemen, the Syrian Arab Republic and Iraq, plummeting to $28.8 million in 2018–19 from $38 million a decade ago. However, exports witnessed an increase of 15.5% to $10 million in the first five months of the 2020/21 fiscal year from $8.7 million in the same period a year ago.

Source: *Dawn* newspaper. Available from https://www.dawn.com/news/1623427.

considered by the industry are neighbouring countries where costs are lower ($0.12 per kWh in the Republic of India and $0.09 per kWh in Bangladesh. According to industry players, 2–3-hour daily power outages accounts for approximately 3.5–4 working days of additional costs of electricity, which hikes the overall power bill by almost 40%. Cheaper and reliable electricity would mean lower input costs and cheaper finished products in the international market with which to compete.

- Although power outages have slightly reduced compared to previous few years, the problem of an inconsistent power supply remains. To meet production targets, a few firms have to use their own power generation that costs them much more. A consistent power supply can ensure that production is smooth and labour is used effectively.
- This rise in cost reduces industrial competitiveness and necessitates dependence on government-funded subsidies on power tariffs to shield export-oriented industries from the full brunt of tariff hikes. In January 2021, the government announced a 15% average increase in power tariffs across the board, arguing that the step was necessitated by compulsory payments that have come with the new power generation capacity installed in recent years.

Export financing

- The lack of export financing and formal banking channels with neighbouring countries (e.g. Afghanistan, the Islamic Republic of Iran, and India) and non-traditional export destinations (e.g. central Asian economies) mean that exporters cannot realize their potential. Also, Pakistan's existing banking system must be made compatible with key export destinations to ensure that there are no undue financial barriers to trade.

Cost of industrial land

- Although the government has begun introducing special economic zones (SEZs) that can cater to the needs of acquiring land, the manufacturing entity's logistical hurdles do not allow them to expand to a different industrial zone. For example, the Sindh Industrial Trading Estate (SITE) in Karachi is almost a fully occupied industrial zone that is now surrounded by residential areas. In order for a manufacturing unit to expand, they seek land with the same industrial zone, which is either too expensive or not available at all.
- Automotive assembly and manufacturing are cluster dependent where the presence of essential suppliers within the industrial zone greatly impact the logistics and delivery lead time.

» Relevant activities in the PoA for supply level: 1.1.1; 1.1.2; 1.1.3; 1.1.4; 1.1.5; 1.3.1; 1.3.2; 2.1.1; 2.1.2; 2.1.3; 2.2.1; 2.2.2; 2.2.3; 4.2.7.

PRODUCTION/MANUFACTURING/ PROCESSING LEVEL

Compliance with international standards

- The Pakistan Standards and Quality Control Authority (PSQCA) governs compliance aspects of electrical goods and has conformity assessment centres in all the provincial capitals, and the Pakistan Council of Scientific & Industrial Research (PCSIR) has a lab network in all provincial capitals that provides testing services pertinent to mechanical/engineering goods. The testing facility is sufficient to cater to the needs, but exporters usually rely on international quality certifications that include SGS, Bureau Veritas and Intertek, etc.
- Large-scale manufacturers (primary exporters) do perform rigorous testing on their goods to meet the compliance standards required domestically and internationally. However, the majority of firms in the engineering goods sector are micro, small and medium-sized enterprises (MSMEs), which are reluctant to obtain certification, for example from the Pakistan Standards and Quality Control Authority. For such suppliers, the cost of PKR 80,000[12] per year for obtaining a certificate is a costly proposition. For overall upgrading of the quality and standards compliance in the sector and to ensure that more firms comply, it is important to devise an incentives framework to encourage MSMEs.

Technology upgrading and linking industry and academia to improve firm-level R&D

- SMEs are reluctant to invest in upgrading the manufacturing facility, which risks their competitiveness with the rapidly changing world. Upgrading manufacturing processes will allow more room for production and achieving economies of scale. Since most of the processes are labour intensive due to lack of technological upgrades, productivity is low. Many manually driven processes can be automated by implementing latest machineries that can enhance productivity and output.
- Many firms do not invest in R&D or product innovation, and this risks products not keeping up with changes in the international market. Product innovations will allow the electric fans sector to gain required competitiveness in the international market.
- There is only limited engagement between industry and academia in the engineering goods sector with a commercial outlook, and this tends to influence the low level of in-house firm-level R&D. While there are no formal industry–academia linkages through government-funded start-up ecosystem incubations, there are ventures that use engineering students' final-year projects and take them on board for public–private initiatives. Some of the NED University of Engineering & Technology and University of Peshawar FYP batches of 2019 and 2020 are working with Peshawar BRT on the development and implementation of pay-per-usage electric bikes and cycles and is shared as a success story. Such direct linkages of academia with corporations can address the need for skills required from the graduates who will eventually be absorb in the job market. Industry stakeholders believe that the focus should be not on competing with international brands on engine manufacturing, but rather building capabilities for manufacturing engines locally that are at par with international standards.
- Industry players cite the need for direct assistance and encouragement from the government for local manufacturers to work on this and introduce an incentives framework for technology transfer to take place. Based on the recent annual reports of major public-listed automotive parts and assemblers, approximately 3%–5% of the retained profits are allocated for R&D. One state-of-the-art functional R&D centre in Pakistan is that of a recent automotive player, Master Changan Motors, which is currently testing autonomous vehicles for Pakistani roads. For other market players, they have technical centres that provide feedback to overseas R&D

12.– PKR = Pakistani rupee.

centres of their principles based in Japan, Vietnam or Malaysia. An immediate opportunity would be to encourage these principles to establish captive R&D/technical testing centres in Pakistan for their global operations.

Tax anomalies, policy inconsistency and informal trade

- Pakistan's tax base is narrow (2% of taxpayers only in the entire country), with manufacturing carrying a disproportionate burden. The complex tax system has been undergoing drastic changes and standardization in the past 2-3 years, of which many small exporters are not aware. This remains a bottleneck for broadening the tax base. Withholding tax on non-filers has become a revenue-raising tool rather than one that incentivizes more to join the tax base.
- Manufacturers pay sales tax on entire value addition and importers only on import value. This aspect hampers business expansion, as businesses see importing of raw materials or semi-finished products as a more cost-effective measure.
- Issues faced in compliance with taxes and refunds remain a key concern (which is also preventing formalization of businesses).
- In the auto sector, industry players noted that, in 2017-21, multiple statutory regulatory orders (SROs) were implemented that caused changes in the overall import landscape of passenger vehicles, eventually fluctuating the demand for associated automotive parts too. Such inconsistent policies have a negative impact on industrialists' sentiments and consequently affect business performance and incentives to expand and upgrade.
- Most engineering goods manufacturing takes place in Punjab and many products, particularly electric fans, are smuggled to Afghanistan and Central Asia. The formal sector faces an uneven playing field in terms of smugglers, counterfeiters and under-invoicing.

Supporting start-ups and improving access to new technologies through larger firms

- In the engineering goods space, the automotive parts and automotive service segment has plenty of start-ups such as Auto Sahulat and PakCarz that jointly work with original equipment manufacturer parts suppliers for boosting local sales. However, there is little opportunity given to start-ups for joint R&D and use of the manufacturing facilities.
- While individual firms are not actively involved in their individual capacity, at a sector level, the Pakistan Electric Fan Manufacturers Association's (PEFMA) Fan Development Institute provides guidance to electric fan manufacturers on the use and improvement of manufacturing and assembling technologies.

Spurring innovation and entrepreneurship in the fans sector

- Usually, any new product or a stock-keeping unit (SKU) in the fans sector is introduced by big players (e.g. GFC Fans or Royal Fans) and the same is replicated by other small players. The Fan Development Institute is the only institution where a young skilled force is trained specifically for electric fans manufacturing, and few among these have enough financial support to set up a small-scale industry. Therefore, incentives are required for this sector to have dedicated innovation centres that can build a base for the industry to diversify the electric fans product portfolio.
- Potential exporters in Islamabad have stated that incubators at engineering universities need to be encouraged through changes in provincial development policies (e.g. Punjab Growth Strategy) and specific programmes under the provincial annual development plans to help start-ups in the manufacturing sector to sustain the initial period of their existence and also become exporting entities in the medium term.
- The absence of accessible platforms for young entrepreneurs and science, technology, engineering and mathematics (STEM) students to engage with experienced experts is another key constraint, which leads to lack of knowledge sharing in order to advance upgrading and innovation in the engineering goods sector.

» Relevant activities in the PoA for production/manufacturing/processing level: 1.2.1; 1.2.2; 1.2.3; 3.1.1; 3.1.2; 3.1.3; 3.2.1; 3.2.2; 3.2.3.

MARKET ACCESS LEVEL

Strengthening trade information and international marketing

- Currently, few firms have in-house specialized teams for foreign sales, and some have international sales offices too. There are no dedicated third-party services in this domain. The firms usually have internal

marketing and business development strategies, and there are no professional consultancy services for this either. The improvement of firms' international marketing was identified as a key competitiveness constraint for the engineering goods sector and was also identified by the international expert as a priority action for the sector's future development.

- The lack of dedicated team to handle exports was identified by SMEs in the sector, which rely entirely on clearing agents or large firms for exports of their goods. There is little in-house trade/export capability to enable smarter exporting practices.
- The TDAP is the only entity on which firms currently can rely to explore the international markets (participation via international trade fairs). Some exporters already have international sales and distribution offices, and some businesses have subscribed to trade-related news such as Bloomberg and the *Journal of Commerce* to stay informed about international market dynamics for their products.
- The shift to new markets is often quite slow, but exporters are responsive to policy initiatives and fiscal incentives to explore specific markets.
- Under MoC's Look Africa policy initiative, exporters began looking at enhancing their trading of multiple goods with African countries.
- In addition to market information and marketing abilities, understanding compliance requirements is also important. It was revealed that a reason that Pakistan was unable to fully achieve the anticipated gains from GSP+ was weak knowledge of certification requirements, particularly for non-textile items for which Pakistan enjoys preferential market access.

Skewed incentives towards domestic sales

- High domestic demand for electric fans has meant there is less incentive for local manufacturers to diversify into exports. Reportedly, the export markets for fans usually earns lower margins (given intense competition and a highly undifferentiated market, as noted earlier) compared to the local market.
- In addition, local manufacturers' inability to effectively engage in export promotion and international branding (with little to no support from the government) means that foreign agents take larger shares of value, rather than it being captured in Pakistan.

Brand development to earn higher prices

- The desire for brand development was strongly articulated by engineering goods stakeholders, in both the automotive and electric fans sectors. In electric fans, considering the homogeneity of the finished product that Pakistan currently exports, many exporters struggle to retain the brand's goodwill in the international market. They still face the dilemma of competing with other brands (even the relatively newer ones, considering that many of Pakistan's top exporters have been in the export market for more than 25 years) and earning very thin margins on their exports.
- In the automotive sector, the majority of exports are already associated with the joint ventures of firms from Japan, Viet Nam, China or Malaysia and, as such, much of the branding is covered through that. However, industry players seek to enhance the appeal of the local brand(s) complying with similar international standards. An example cited was that of Millat Tractors Ltd (a leading gears producer), which specializes in high-quality tractor gears for export markets, but is in competition with Swedish brand SKF. The SKF brand is perceived to be better quality (and thus attracts a higher price), but is largely a similar product. The emphasis would be to boost the brand image of Pakistan-made engineering goods to compete on par with competitor brands currently available in the world market. Stakeholders believe that a direction towards brand development is necessary to combat the perception that Pakistan cannot manufacture quality products.

» Relevant activities in the PoA for market access level: 4.2.1; 4.2.2; 4.2.3; 4.2.4; 4.2.5; 4.2.6; 4.2.7.

©shutterstock

THE WAY FORWARD

Changing patterns of demand and production in the global automobiles and electric fans sectors mean that Pakistani producers will need to adapt to succeed in international markets. At the same time, it is clear that there are many opportunities for both automobiles and electric fans manufacturers to supply new sources of demand, and Pakistani firms risk being left behind in future if they are unable to adapt. The sector will need to balance these considerations in charting the way forward for the sector.

For example, automotive sector growth is receiving a new impetus due to changing environmental regulations and demand for e-mobility and other innovative and energy efficient solutions. In automobiles, the shifts seen globally in greater technology embedding within vehicles, including digitalization and electrification, will influence the sector's future. In electric fans, the sector's highly price-competitive nature and the development of value-added products (connected devices, air purification properties and energy efficiency) for the home and industrials segment will influence the growth trajectory there.

The key drivers of change and how the sector should adapt

Pakistan's engineering goods (automobiles and electric fans) sector has grown over the years, benefitting from the market and supportive policies and skills, though its contribution to exports has been limited. Expanding the sector through trade will, therefore, require the sector to identify opportunities for building on these strengths. FDI inflows into the engineering goods sector appear to be growing steadily, but remain tepid compared to other sectors in Pakistan and also compared to Pakistan's competitors.

As discussed in previous sections, there are several competitiveness challenges facing Pakistan's engineering goods sector. If overcome in a comprehensive and timely manner, these can make Pakistan a leading manufacturer and exporter in this sector, with a strong regional presence, and a desirable investment destination for production in the region. What is required is setting some strategic objectives for the short to medium term to drive sector transformation, and to prioritize key actions. These strategic objectives for the sector's development are reflected in the strategic foresight and the future value chain, which are the result of consultations, surveys and analyses conducted as part of the Engineering Goods Sector Strategy design process, and is rooted in the diagnostic section of the document. The future perspective offers resolution of the current issues and provides responses to the opportunities, and has two main components:

- A market-related component involving identification of key markets for Pakistani exporters;
- Structural changes to the value chain that result in either strengthening of linkages or introduction of new linkages.

STRATEGIC FORESIGHT

The way forward in automobiles and electric fans will hinge crucially on building domestic manufacturing capabilities, and through this and alongside this to strengthen capabilities for exports. Addressing the vital skills upgrading requirements, improving current manufacturing practices, adopting technology in production processes, enhancing international market entry abilities, and strengthening the R&D and innovation ecosystem to improve quality of existing products and processes while also diversifying into new and improved products are some of the key areas to be tackled.

The strategy process considered current capabilities and constraints, and future shifts and opportunities

for Pakistan's engineering goods sector, and industry stakeholders extensively evaluated future orientations and upgrading trajectories using the Ride Two Curves[13] tool (Figure 25). The first curve assesses today's ways of doing things and which of those will remain strong and competitive into the future (i.e. will remain as residual assets for Pakistan). The second curve assesses the current innovations and trends already seen in Pakistan and globally, and how these will influence the future strategic orientation of Pakistan's engineering goods sector (i.e. tomorrow's way of doing things).

Table 5 captures the summary of stakeholders' analysis of future trajectories along the two curves for automobiles and electric fans separately. Some current advantages will continue into the future, such as the availability of labour, the geographic location and proximity to growing markets such as Africa and the Middle East, and the large domestic market that makes initial investment attractive. The existence of some foreign investment already in the automobiles sector bodes well for FDI prospects into engineering goods manufacturing.

The key messages that emerge from this exercise are the following presented in Table 5.

Table 5: Summary of stakeholder perspectives on future trajectories

	Residual assets	Strategic shifts
Automobiles	Some compelling residual assets include the low labour cost, skilled middle-level human resources, experience in working with Japanese original equipment manufacturers (and, thus, understanding of quality requirements), ability to work with low-volume orders and convenient geographic location to access regional markets.	Some compelling strategic future shifts include export of components to regional economies in Africa and South Asia, hybrid cars and motorcycles, playing stronger in the global supply chain, establishing offshore offices and warehouses, using simulation software for product development, forming joint ventures with technologically advanced producers, and adopting automation and investments in new technology.
Electric fans	Industry players did not identify any residual assets for this sector.	Some strategic future shifts include producing fans that are more powerful, but lighter, shifting from the current domestic heavy focus to international markets and, most notably, producing fans with air filters and sensors that automatically detect temperature and moisture and filter out harmful elements.

THE FUTURE VALUE CHAIN

Unlocking the potential of Pakistan's engineering goods sector will require transformations throughout the value chain. These adjustments, as reflected in the present and future value chain schematics (Figure 26 and Figure 27) are the result of the targeted efforts detailed in the strategy's PoA that address the constraints identified in the competitiveness constraints section. The future value chain will be characterized by:

- Increased investments in the sector (domestic and FDI);
- Improved access to financing (for newer firms, and for international expansion and innovation);
- Specialized vocational training programmes;
- Emphasized R&D and innovation;
- Improved quality of raw material;
- Improved branding opportunities.

The sector's future value chain is driven by its market development objectives that effectively steer the value chain enhancements and the investment focus areas. The identification of new products and markets underpins the elaboration of the future value chain.

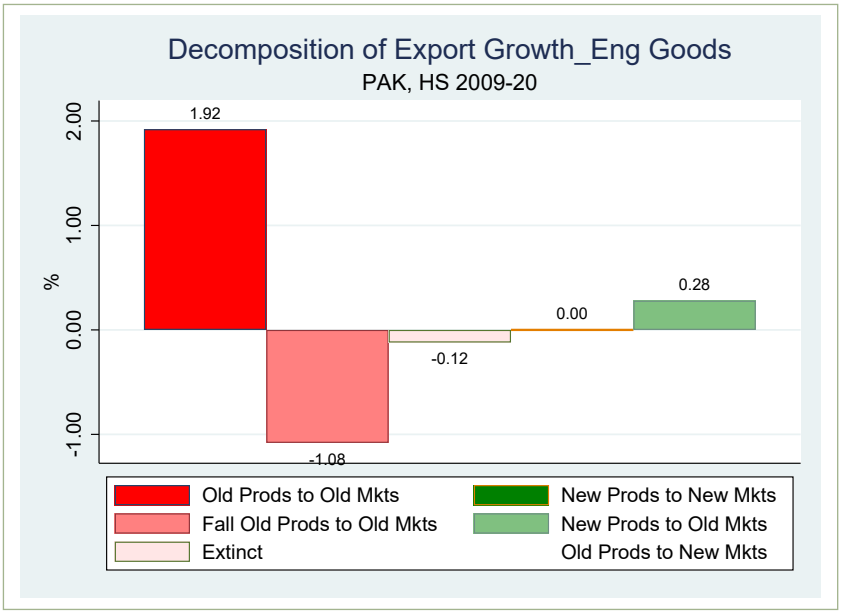
Leveraging market opportunities

The engineering goods sector has the potential to play a key role in Pakistan's overall economic transformation by contributing to job creation not just in key cities, but also in secondary growth hubs around the country. The sector focuses on producing high-quality, innovative products by upgrading its manufacturing processes to increase automation, which is critical to tap into export opportunities and ensure market diversification beyond the domestic market. Therefore, markets have been identified on the basis of market size, demand for products, technology, development and the sustainability of the end product industry in the near and long-term future.

13.– Ride Two Curves © 2017 Institute for the Future. All rights reserved.

An analysis of the source of export performance (Figure 24) confirms that the majority of growth in Pakistani engineering goods exports in 2009-20 was generated by an increase in exports of traditional products to existing markets. There has been some small product diversification with registered growth in new products to traditional markets. The low degree of diversification in the last decade reflects weak technology adoption, limited access to finance and a number of supply-side constraints. The following section identifies opportunities for Pakistan to leverage to overcome these challenges.

Figure 24: Decomposition of Pakistan's export growth



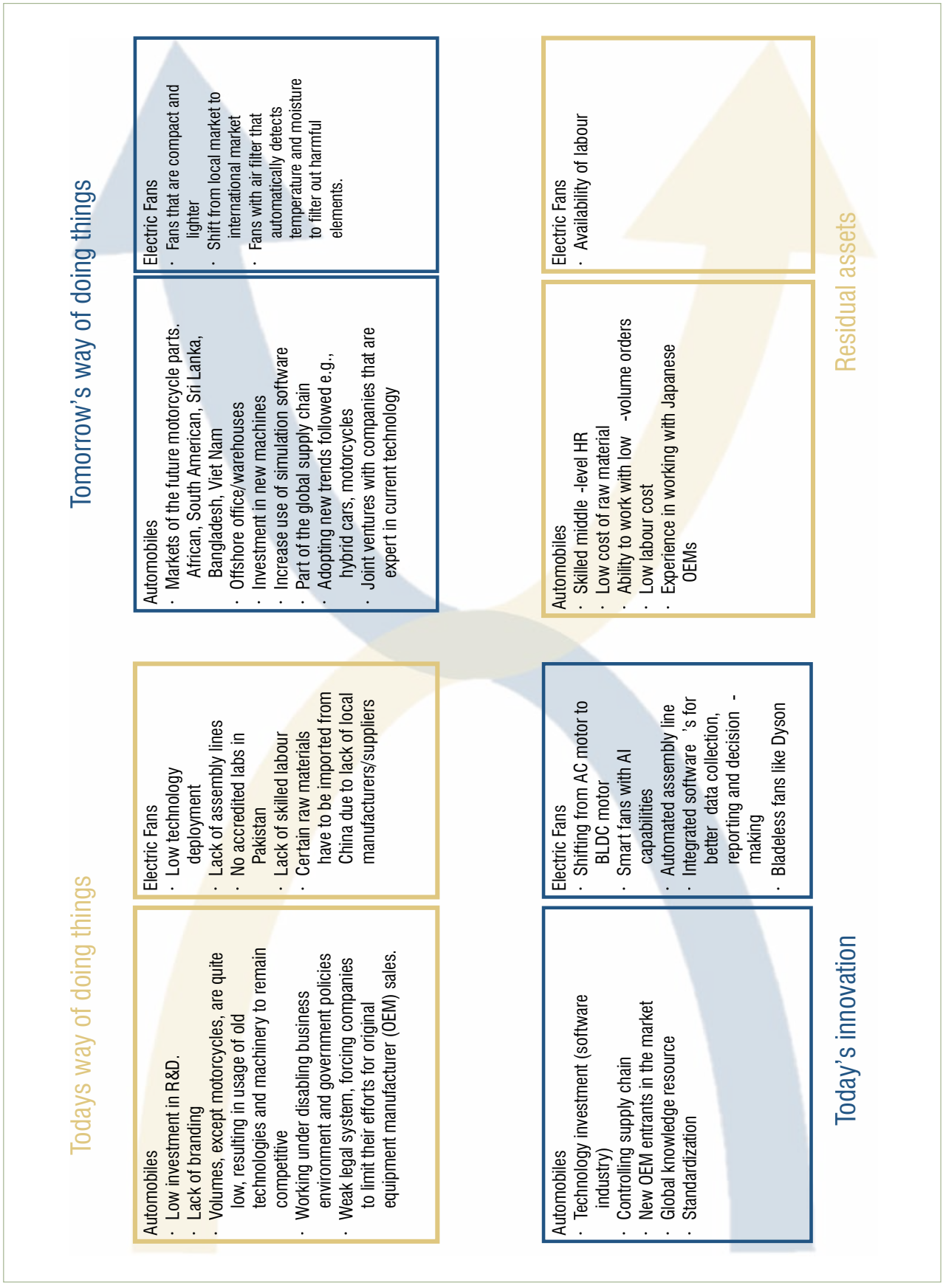
Source: ITC calculations based on United Nations Comtrade statistics.

The domestic market for engineering products is important, as the initial requirements are not stringent and can take care of low selections and products. It gives an opportunity to local manufacturers as the scale, and hence the risk, is low. It also provides an opportunity to develop the local industry to curb imports and develop the local talent pool. However, manufacturers' local capacities must also be challenged by the more stringent requirements of foreign buyers. That experience is required for the sector to grow to a point where it can compete in global markets and eventually attract the foreign capital, technologies and expertise needed to move it up the value chain.

Based on Pakistan's trading relationship and expectations of future growth, the markets of Africa, the Middle East and South Asia are expected to be particularly important export markets for the automotive sector. Similarly, the US market will be of importance for the exports of electric fans. Succeeding in these markets, however, will require exporters to adapt to these markets' requirements and expectations, including increased certification and compliance standards, use of technology, and regularly updated market intelligence.

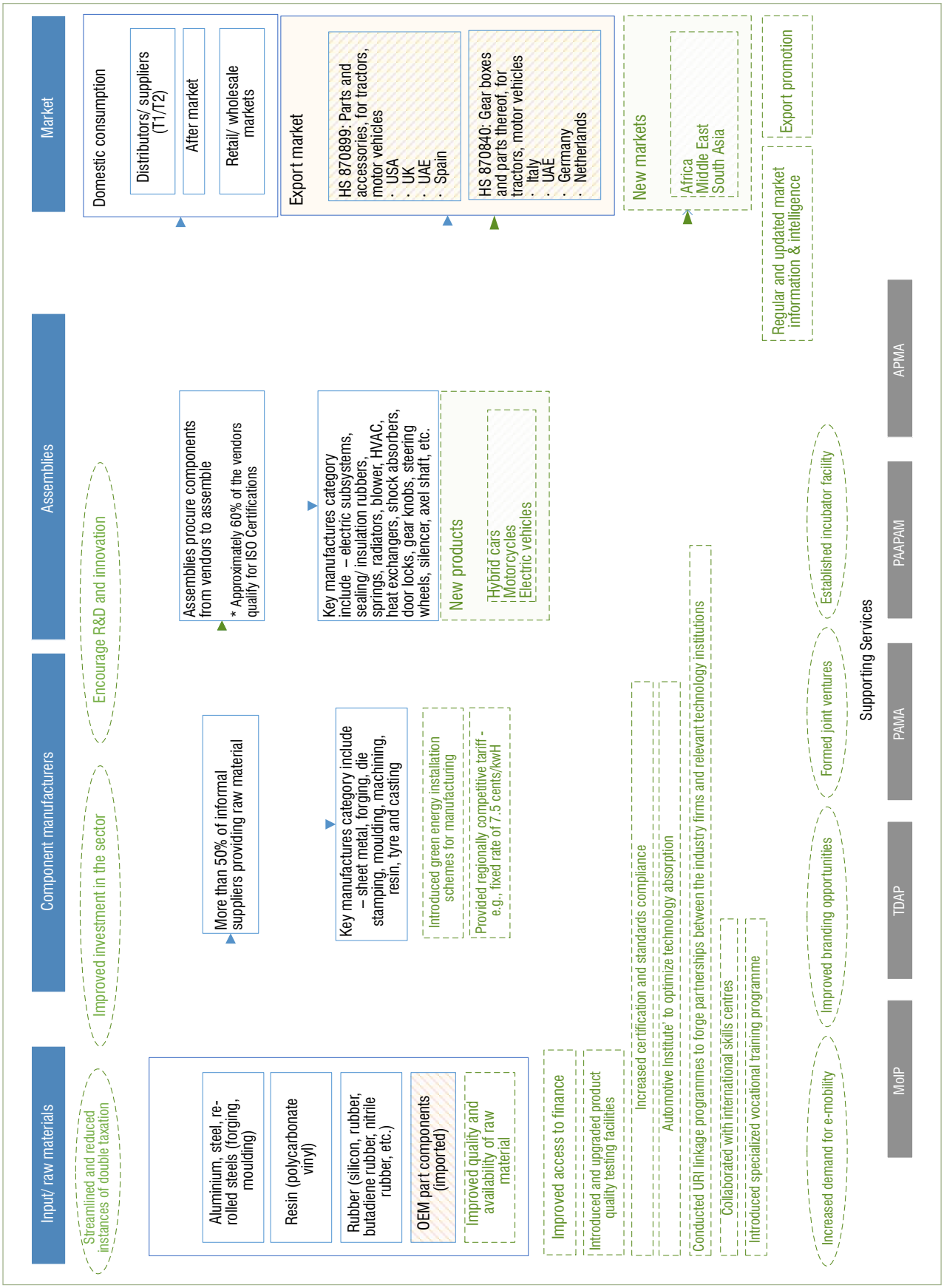
©shutterstock

Figure 25: Ride Two Curves exercise



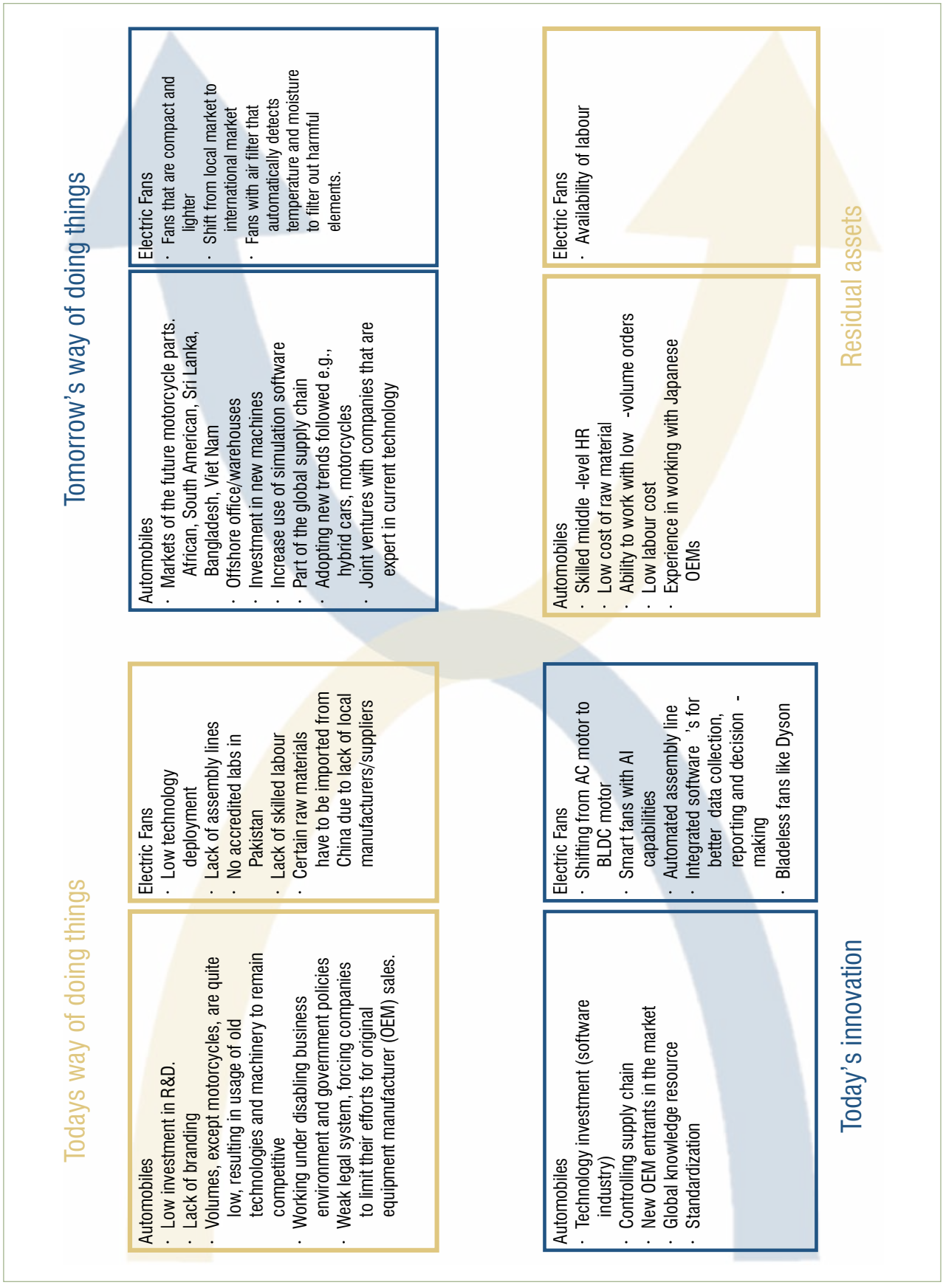
Source: ITC, adapted from the Institute for the Future.

Figure 26: Future value chain map for automotive sector



Source: ITC.

Figure 27: Future value chain map for electric fans



Source: ITC.

Key orientations to drive transformation in the sector

ORIENTATION 1: CONSOLIDATE THE ELECTRIC FANS SECTOR AND EXPLORE NEW OPPORTUNITIES

Larger firms: A key focus area that would be required for transformation in the sector, in order to drive greater competitiveness, profitability and international presence, is to explore avenues for consolidating the sector. Currently, there are several small and medium players in the sector and a high degree of informality across the electric fans supply chain. Having fewer larger firms in the electric fans sector can help. As international market experts have pointed out, it would be vital to create units as big as possible to manufacture electric fans for the consumer market and to realize economies of scale as far as possible to compete in this low-margin and highly competitive market. Following a consolidation of the sector, the government would also be able to better target its assistance and support – to a fewer number of stronger, larger players with greater international potential. This would have the following implications for the strategy:

- Investment: Focus investment attraction efforts that forge joint ventures for domestic firms to increase scale and competencies (see Activity 4.1.2 in PoA) and enable better export development financing to support scale growth (see Activity 4.2.6 in PoA).
- Institutional changes: Have the Board of Investment improve its investor targeting and identification of specific factors that investors look for in this sector and developing pitch books in collaboration with the industry.

B2B segment: Another focus area would need to be an exploration of more attractive segments in the B2B market. The market is very fragmented and specialized, so Pakistani players have to identify the segments that are feasible to enter due to less competition, healthy margins and other criteria. It could be that investment in both the business-to-consumer (B2C) and B2B segments is not feasible, as the product range, the market intelligence, the sales and marketing approach and expertise, etc. required for each would be quite different. Players should set priorities to enter into the electric fans B2B market or to stay in the B2C market. If firms identify this shift as feasible and worthwhile, the sector should analyse the B2B market: market segments, criteria for possible targets, possible positioning, market size, competition landscape, marketing and sales strategies required, and staff capabilities required, etc. This would have the following implications for the strategy:

- Market: Focus marketing efforts on international fairs and pursue B2B opportunities (see Activity 4.2.2 in PoA).
- Institutional changes: Improve trade agencies like the TDAP's ability for better trade information provision (see Activity 4.2.5 in PoA) and train commercial counsellors to scope out new B2B opportunities (see Activity 4.2.1 in PoA).

Energy efficiency focus: Household fan manufacturers are increasingly producing energy-efficient products to reduce carbon footprint and enable energy savings for consumers. The rise of energy-efficient appliances can be attributed to stringent government regulations on electric home appliances and advances in technology. Energy-efficient fans are designed to use minimum energy. Currently, more than 80 countries have standards and labels for energy-efficient appliances. For example, in the United States, Energy Star-certified ceiling fans provide cutting-edge design, use latest technology and are 60% more efficient than conventional ceiling fans. This should be a key focus area for Pakistani manufacturers to secure a unique edge in the market. Firms will need to work with the innovation ecosystem to develop new products that are at the cutting-edge of energy efficiency. This would have the following implications for the strategy:

- Investment: Fund programmes that support firms (especially SMEs) to obtain international standards certification relating to new energy efficiency credentials of the final product (see Activities 1.1.3, 1.1.4 and 1.1.5 in PoA); enable financing of greening of production process (see Activity 1.3.1 in PoA); establish an incubator facility to spur innovation and new product development (see Activity 3.2.1 in PoA).
- Skills: Forge linkages with universities to foster R&D in new products that meet new green standards in fans (see Activity 3.1.1 in PoA).

Stronger export market access: Individual firms, or a group of firms as a consortium, should develop a market entry strategy into identified global markets, especially those that Pakistan enjoys preferential trade access to (e.g. through the United States' GSP scheme). To be resource efficient and to make early inroads, the sector can choose one location to start with that has a good market potential, and market test with setting up a sales office. Within this market, choose 2–3 segments at the beginning where firms would have a limited number of obstacles, while keeping other segments on hold. The United States is currently the largest consumer market for electric fans. The indicative trade potential for Pakistan to increase overall exports under the US GSP scheme is $2.4 billion (at the HS-06 level), and the indicative potential for the Top 20 products is $2 billion. One of the top 20 is '841451- electric fans, table, floor, wall, window, ceiling, or roof, with self-contained electric motor of an output not exceeding 125w'. To finance these internationalizations more effectively, new finance options are needed (see Box 4 for more).

This would have the following implications for the strategy:

- Markets: Develop and implement a detailed market entry plan for key markets (see Activities 4.2.3. and 4.2.4 in PoA); use existing trade preferences to better and inform the course of new free trade agreements (FTAs) (see Activity 4.2.6 in PoA).
- Institutional: Improve capabilities of export promotion agencies such as the TDAP to identify market opportunities and provide trade intelligence to firms (see Activity 4.2.5 in PoA);
- Investment: Introduce new financing windows to enable affordable financing for firms to undertake their internationalization (see Activity 4.2.7 in PoA).

Box 4: Financing international expansion of engineering goods firms

Governmental incentives and support for financing international expansion would be vital. The most traditional incentives are bank loans with lower interest rates to SMEs for market development, technological development or innovations. The effect is often doubtful, as no company would invest only under the condition of lower interest rates, but rather because they see potential for profit and growth. Currently, exporters are permitted to retain and use 10% of annual export earnings for market development and the Pakistan Business Council have put forward proposals to expand this eligibility. Meanwhile, another important area to explore is financing Pakistani export houses in foreign countries that support SMEs' first steps into a foreign market with cheap rental fees, commercial advice and exchange of experiences, etc. on the lines of 'German houses' in foreign countries that offer exactly this (and more). Drastic fluctuations in the exchange rates for long-term contracts make it difficult to plan business expansion, and clever government initiatives to bridge this can vastly improve firms' ability to plan and execute international expansions.

Source: ITC experts.

ORIENTATION 2: STRENGTHEN CAPABILITIES IN THE AUTOMOBILE SECTOR AND EXPLORE NEW GROWTH MARKETS

Enhancing quality, technology upgrading and innovation: There are many certifications, fulfilment of norms and standards in the automotive industry that must be adhered to and enhanced by Pakistani players. Company visits might help to benchmark what is possible and how to organize it. For example, an automotive institute to optimize technology absorption strategically, training of experts in this field, and support or consult the operations of automotive manufactures and supply companies. SMEs (including family companies) are often an important source of innovation, as they can be faster and more flexible than larger corporations can. However, they can be constrained by capital, and must be supported through various financial mechanisms.

This would have the following implications for the strategy:

- Investment: Establish an incubator facility to spur innovation and new product development (see Activity 3.2.1 in PoA); introduce new financing windows to enable affordable financing for firms (see Activity 4.2.7 in PoA); introduce a time-bound and structured fiscal incentives regime to encourage in-house R&D and innovation (see Activity 3.2.3 in PoA).
- Skills: Forge linkages with universities to foster R&D in new products that meet new green standards in fans (see Activity 3.1.1 in PoA).

Leveraging preferential trade access to grow exports: The indicative trade potential for Pakistan to increase exports under the United States' GSP scheme is $2.4 billion (at the HS-06 level), and the indicative potential for the Top 20 products is $2 billion. Pakistan can take a cue from the Republic of Turkey, and India, where their exports to the United States have vastly benefited from the GSP scheme, accounting for one of their Top 20 imports. While the European market is currently of focus for Pakistani automobile players, it is advisable to not set too strong a focus on Europe, as it is a highly competitive market. Instead, continue to focus on other markets in the Middle East and Africa. While the margins might be competitive and volumes might be slightly lower, the chances of success can be higher – especially considering the strong inroads already being made in these markets and Pakistani managers having already gained valuable experience in doing business there. This would have the following implications for the strategy:

- Markets: Use existing trade preferences better and build private-public dialogue and consensus to inform future free trade agreement prioritization (see Activity 4.2.6 in PoA).

Strategies for strengthening market entry: Opening a sales office in an automotive area/region is an advisable strategy for automobiles, including motorcycles, along with finding an expert who has experience operating in competitive automotive markets (e.g. in Stuttgart, Germany). Box 5 explains the rationale for selecting such an expert, based on an interview with an automobile industry strategy leader.

This would have the following implications for the strategy:

- Investment: Introduce new financing windows to enable affordable financing for firms to undertake their internationalization (see Activity 4.2.7 in PoA).
- Markets: Develop and implement a detailed market entry plan for key markets (see Activities 4.2.3 and 4.2.4 in PoA).

Balancing the automobile opportunities in electric with the current traditional capabilities: It is important for Pakistan to continue to focus on the supply chain in traditional combustion engines, given its current capabilities in this space. Within this, manufacturers need to be aware that they would have to compete over price, and quality assurance is needed as well as greater technology intensity in products. To propose a dramatic and immediate shift to serve the growing electric vehicle market would be both irresponsible and unfeasible. So, while continuing to leverage on current capabilities, Pakistan's automobile sector must look at making steady inroads in the electric vehicle market. This shift will also be amply supported by new government policies aimed at supporting the growth of electric vehicles. Pakistani manufacturers need to start developing specific know-how for electric vehicles. It is vital to attract domestic as well as foreign direct investments in this sector in order to accelerate the transfer of know-how on electrification of vehicles, but also on other technologies beginning to shape this sector. These include autonomous driving, assistance systems and optimization of the electronic control units (ECU), as embedded systems in automotive electronics are technologies that shape the automotive future. Pakistan should participate in this know-how journey; otherwise, the technological development will pass by without the chance to make up for lost time.

This would have the following implications for the strategy:

- Investment: Establish an incubator facility to spur innovation and new product development (see Activity 3.2.1 in PoA); introduce new financing windows to enable affordable financing for firms (see Activity 4.2.7 in PoA); introduce time-bound and structured fiscal incentives regime to encourage in-house R&D and innovation (see Activity 3.2.3 in PoA).
- Skills: Forge linkages with universities to foster R&D in new products (see Activity 3.1.1 in PoA).

Box 5: Finding an international expert to support market entry

The following is an excerpt from an interview with an automobile industry strategy leader in Germany on finding an international expert to support Pakistani firms to have stronger market entry.

You need to find someone who will be your man or woman on the ground. The profile of this person should be of around age 57 plus, and looking for something to work on, because they feel too young to stay at home. Typically, they would be quite financially independent by now and willing to work with less established players, but still interested to earn money. And someone who is looking for a challenge, do something new, that they have never done. This person needs to have relevant and provable industry insights in the business, with very good contacts in the relevant networks – to possible customers or sales agents, and to the relevant market environment. Mainly you need to search for 'retired experts' in technology and/or marketing/sales to gain their experiences within the network you develop via your sales office in the automotive area.

Source: ITC experts.

ORIENTATION 3: STRONG FOCUS ON QUALITY AND STANDARDS THROUGHOUT THE VALUE CHAIN

Given the extent of the challenges currently faced regarding access to quality raw materials, quality and standards gaps in suppliers (especially smaller suppliers) and the heightened requirements of quality and certifications in international markets, the above orientation is of utmost priority. It is the main path towards sustained growth and survivability of the sector. Investments would be needed in:

- Domestic testing and certification capabilities (essentially upgrading the national quality infrastructure);
- More rigorous quality assurance of raw material and other intermediate inputs coming into Pakistan for the electric fans and automobiles supply chains;
- Enhancing awareness and understanding of domestic firms on the need for adopting more stringent quality standards and providing avenues for doing so.

This would be a longer-term endeavour, but can have some short-term steps to steadily get there – such as reviewing the current landscape for quality checking of raw materials and helping manufacturers understand the emerging global landscape for certifications in the engineering goods sector. Industry associations can partner with their international counterparts via a memorandum of understanding to help enhance awareness of requirements, while government institutions overseeing the national quality infrastructure make necessary financial allocations for their upgradation and realignment to industry needs, as well as making the necessary regulatory updates to ensure that the legal framework is compatible with contemporary and emerging needs. Technical assistance to improve public and private product testing laboratories' capabilities would need to be a key element in efforts to improve the national quality infrastructure. This would have the following implications for the strategy:

- Investment: Conduct new certification programmes and standards improvement, upgrade the national quality infrastructure and subsidize firms to obtain standards certification for an initial period (see Activities 1.1.1, 1.1.2, 1.1.3, 1.1.4 and 1.1.5 in PoA).

ORIENTATION 4: UPGRADE HUMAN RESOURCE CAPABILITIES AND DRIVE TECHNOLOGICAL PROGRESS

Growing the skilled workforce for engineering goods: The biggest challenge facing Pakistan's engineering goods sector and the ambitions for expansion and international competitiveness is looming human resource constraints. This was widely recognized by stakeholders in both the automobile and electric fans sectors. Upgrading technical and managerial capabilities will be essential, and the plan of action lays out a range of activities to address this. University graduates need perspectives on future opportunities in the automotive

©shutterstock

industry so that a brain drain of qualified people is avoided. To complement this and provide meaningful entry point job opportunities to engineering graduates, the government and engineering goods firms jointly can arrange paid internship programmes (with shared student stipends). Meanwhile, a rapid expansion of technical and vocational-trained workers is needed to grow the base of qualified professionals to support the sector's growth, through specialized programmes separately for the automobile and electric fans sectors. Greater coordination between engineering industries and the faculty teaching at engineering universities will be needed. In the absence of this coordination, the engineering education standards will remain low and engineering industries will not be able to hire talented workers who can boost their businesses.

This would have the following implications for the strategy:

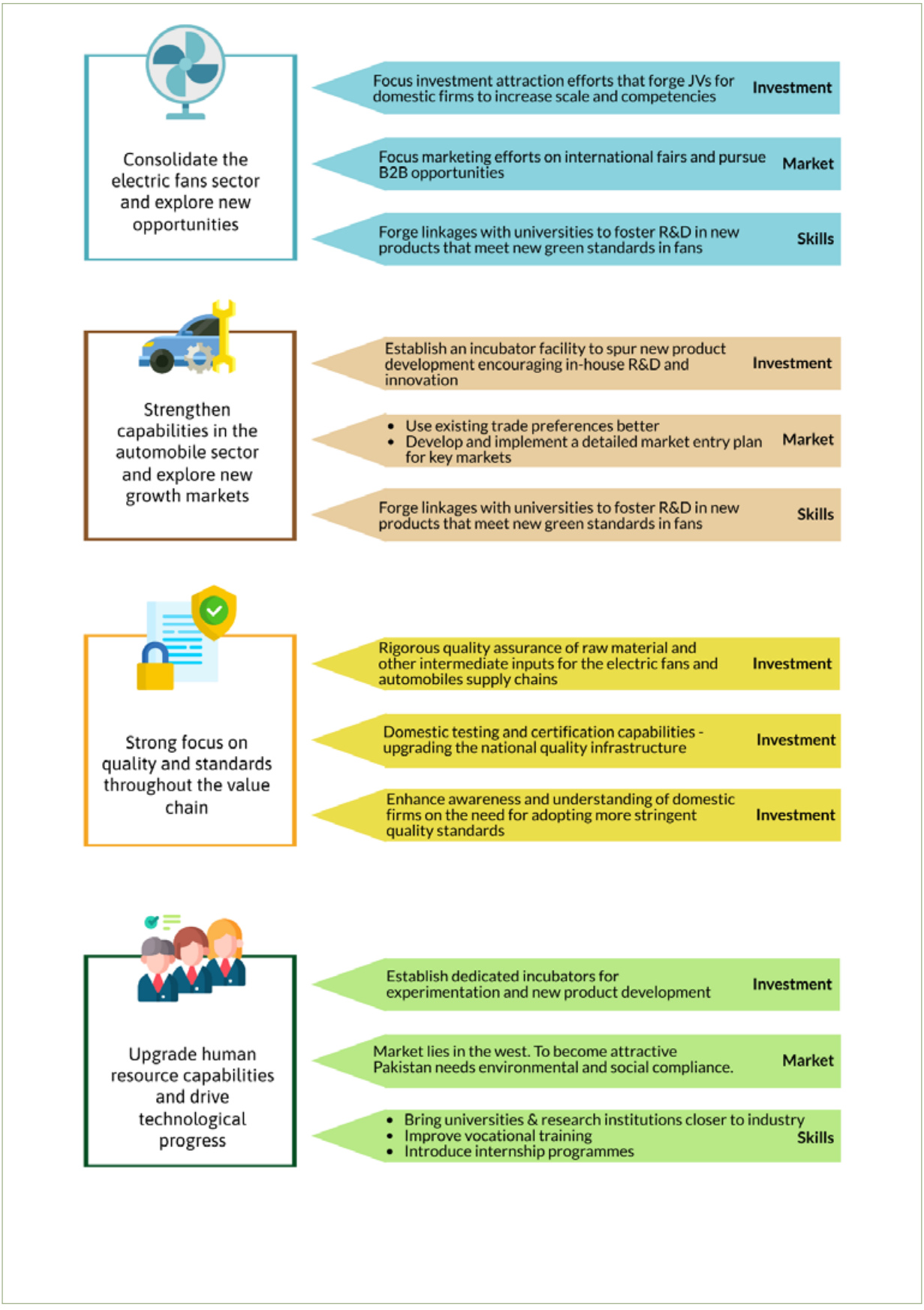
- Skills: Improve vocational training, understand the skills gap and introduce relevant training programmes needed for the sector, creating awareness of the emerging skill and competency requirements so that youth are better informed on what careers and training to pursue, and introduce certification schemes for specific skill categories to boost their recognition and standardization (see Activities 2.1.1, 2.1.2, 2.1.3, 2.2.1, 2.2.2 and 2.2.3 in PoA).

Driving entrepreneurship and innovation: Moreover, the engineering goods sector needs to cultivate entrepreneurial engineers that help go beyond simply engineering acumen to build more business acumen. For this, an entrepreneurship development programme can help to combine technical and commercial knowledge. Additionally, there needs to be programmes to drive innovation and entrepreneurship, which could focus on supporting new technology development and start-ups. In the early stage, governmental support would be needed, while in the longer run, larger corporations might take over to support these activities or to start it themselves via corporate incubators.

This would have the following implications for the strategy:

- Investment: Establish dedicated incubators where experimentation and new product development can happen (see Activities 3.2.1 and 3.2.2 in PoA).
- Institutional: Introduce fiscal incentives packages to encourage R&D and innovation (see Activity 3.2.3 in PoA).
- Skills: Bring universities and research institutions closer to industry and forge R&D and commercialization partnerships (see Activities 3.1.1 and 3.1.2 in PoA), and introduce internship programmes to bring new graduate talents and technical skills into engineering goods firms (see Activity 3.1.3 in PoA).

Figure 28: Key drivers of change



Source: ITC generated.

The strategic framework

THE VISION

In the context of the STPF's broader vision for 'Pakistan to become a dynamic and efficient domestic market as well as a globally competitive export-driven economy', the engineering goods sector offers an important opportunity to enhance domestic manufacturing capabilities, advance export competitiveness and create good jobs for Pakistani workers.

Industry stakeholders deliberated at length in crafting a vision for the sector's five-year strategy, considering key strategic orientations and transformation areas identified. Key words were identified, and several permutations of a vision statement were developed and discussed. A word cloud that visualizes the key words introduced by them is provided in Figure 29.

Figure 29: Word cloud of key vision areas

Eventually, the following statement was selected and delineates this strategy's proposed vision and strategic approach to develop the engineering goods sector.

> **"Realize the enormous potential of Pakistan's engineering goods sector through high-quality products, innovation, and new markets to drive exports and inclusive growth."**

Some key parts of this statement that are compelling are:

- The focus on producing high-quality products; this signals the desire to improve quality, which is a critical determinant of export success and retaining existing, and winning new, business;
- The focus on innovation, which signals an overall upgrading of manufacturing processes and products, and includes the sector's desire to introduce more technology in general and automation specifically;
- The focus on new markets, which is important to ensure market diversification and seeking new growth opportunities beyond the domestic market as well as existing export markets;
- The specific focus on driving exports – which might seem obvious, but is a pivotal one in this sector given the current heavy focus on manufacturing for the domestic market;
- The focus on inclusive growth, which recognizes the potential for the engineering goods sector to play a key role in Pakistan's overall economic transformation by contributing to job creation not just in key cities, but also in secondary growth hubs around the country.

To operationalize and achieve this vision, Pakistan's public and private sector leaders will need to collaborate and work diligently to implement actions, and develop the conditions for strengthening competitiveness, skill upgrading, international marketing and value upgrading in the engineering goods sector.

THE STRATEGIC OBJECTIVES

The proposed plan of action (PoA) will play a critical role in addressing the sector's constraints and leveraging opportunities in a comprehensive manner. The PoA will be structured around the following strategic objectives, agreed with all sector stakeholders.

Strategic Objective 1: Foster an enabling environment for the sector to grow and compete	Strategic Objective 2: Increase availability of skilled and competent labour	Strategic Objective 3: Strengthen technology upgrading and innovation	Strategic Objective 4: Strengthen export promotion and market access
• Improve standards compliance in raw materials and finished products, address anomalies in the tax structure and reduce energy costs	• Expand the skilled labour pool in general and improve setor-relevant technical and vocational education training (TVET) in particular	• Improve access to and adoption of new technology, and create an environment that fosters innovation and improves framework conditions for innovation	• Enhance the international presence and positioning of Pakistani engineering goods and focus and accelerate export promotion efforts

©shutterstock

IMPLEMENTATION FRAMEWORK

The objective of the Engineering Goods Sector Export Strategy for Pakistan is to create an enabling environment for the industry to realize its potential and benefit the country's image. Achieving this ambitious objective will depend on the industry's ability to implement the activities defined in this strategy. To structure sector development, it is recommended that the following interventions be implemented with priority:

- Address quality standards issues in inputs and final products;
- Embark on a comprehensive skills development programme;
- Foster the innovation ecosystem to enable product and process upgrading as well as sustainability;
- Resolve tax anomalies and introduce a competitive energy tariff.

MANAGING FOR RESULTS

It is the translation of priorities into implementable projects that will contribute to achieving the substantial increase in export competitiveness and export earnings envisaged under the strategy. These will be driven by reforming the regulatory framework, optimizing institutional support to exporters and strengthening private sector capacities to respond to market opportunities and challenges. Allocation of human, financial and technical resources is required to efficiently coordinate, implement and monitor overall implementation.

Successful execution of activities will depend on stakeholders' abilities to plan and coordinate actions in a tactical manner. Diverse activities must be synchronized across public and private sector institutions to create sustainable results. Therefore, it is necessary to foster an adequate environment and create an appropriate framework for the strategy's successful implementation.

Key to achieving the targets will be coordination of activities, monitoring progress and mobilizing resources for implementation. To that effect, industry representatives recommended that a public–private sector specific council for the engineering goods sector be rapidly established, operationalized and empowered. It will have to consider the fact that the strategy contains both the automobile and electric fans sectors, so composition will have to be looked at accordingly. The sector specific council is to be responsible for overall coordination, provision of policy guidance and the monitoring of industry development along the strategic orientation.

ENGINEERING GOODS SECTOR SPECIFIC COUNCIL

It is recommended that an engineering goods sector specific council be rapidly established by MoC and effectively organized by the TDAP and MoC to support the industry with the capacity to steer its development strategically. The committee is to be facilitated by a secretariat coordinated by the TDAP, and supported and advised by the Pakistan Electric Fan Manufacturers Association (PEFMA), the Pakistan Association of Automotive Parts & Accessories Manufacturers (PAAPAM) and the Pakistan Automotive Manufacturers Association (PAMA).

Industry representatives recommend that the sector specific council be composed of the following members:

- Ministry of Commerce and Industry;
- Trade Development Authority of Pakistan;
- Pakistan Standards & Quality Control Authority;
- Engineering Development Board;
- Ministry of Federal Education and Professional Training;
- Small and Medium Enterprises Development Authority;
- Federal Board of Revenue;
- Board of Investment;
- Ministry of Science and Technology;
- Pakistan Engineering Council;
- State Bank of Pakistan;

- Technical Education & Vocational Training Authority;
- Pakistan Electric Fans Manufacturers Association;
- Pakistan Association of Automotive Parts & Accessories Manufacturers;
- Pakistan Automotive Manufacturers Association.

It is recommended that the sector specific council be empowered to meet quarterly and to implement the following functions:

- Create a shared understanding of key market challenges and opportunities facing the sector;
- Set goals and targets that, if achieved, will strengthen the sector's competitive position and enhance Pakistan's overall capacity to meet markets' changing demands;
- Propose key policy changes to be undertaken and promote these policy changes among national decision makers;
- Support the coordination, implementation and monitoring of activities in the sector by the government, private sector, institutions or international organizations to ensure alignment to goals and targets, as required to contribute to resource identification and alignment.

As part of the Strategic Trade Policy Framework (STPF) and the sector strategy design process, it has been recommended that an *inter-ministerial and multi-industry private sector* council be organized and structured to address overall challenges and opportunities to Pakistan's trade performance. It is recommended that chairs of the sector specific council be members of the council to consult on key trade thematic areas ranging from policy to regulations and trade negotiations.

KEY SUCCESS FACTORS FOR EFFECTIVE IMPLEMENTATION

The presence of the sector specific council to oversee the strategy's implementation is a key success factor, but it is not sufficient to effectively fulfil its assigned functions.

Private sector support and participation in implementation

The private sector clearly expressed its willingness to contribute, directly or in partnership with public institutions, to the strategy's implementation. Their implementation efforts can range from providing business intelligence to institutions to contributing to project design, promotion and branding, and policy advocacy, etc. In brief, the private sector's practical knowledge of business operations is essential to ensuring that the strategy remains aligned to market trends and opportunities.

Proactive networking and communication

The key implementing institutions detailed in the PoA need to be informed of the strategy's content and the implications for their 2022-26 programming. This networking and communication is essential to build further ownership and to provide institutions with the opportunity to confirm the activities they can implement in the short to long term. It will be important for the TDAP, MoC and members of the sector specific council to reach out to relevant institutions nationally to create awareness and support for the engineering goods industry's development.

Resources for implementation

The sector specific council, in collaboration with the TDAP and the Secretariat at MoC, will need to leverage additional support for efficient implementation. Effective planning and resource mobilization is indispensable in supporting strategy implementation. Resource mobilization should be carefully planned and organized.

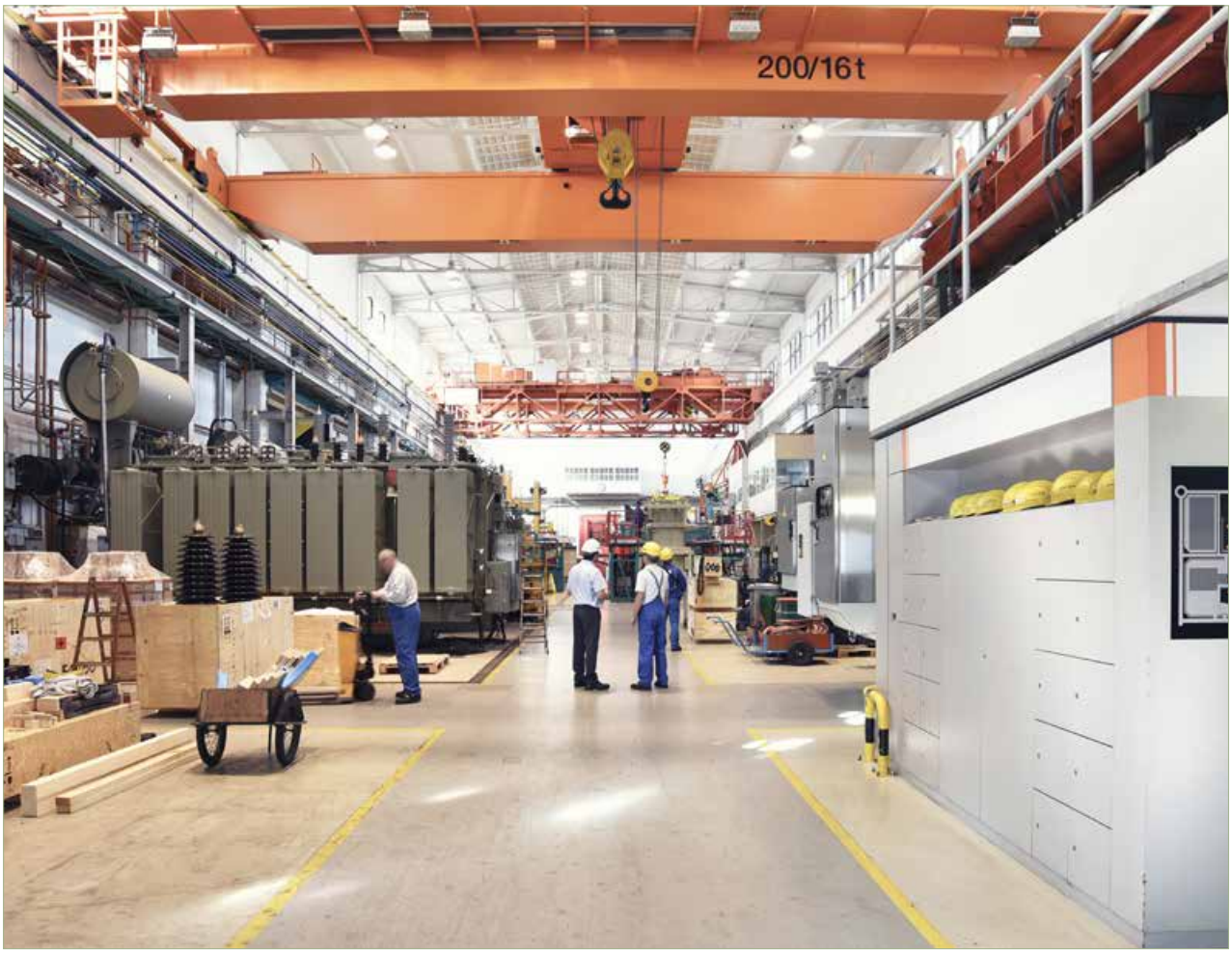
As engineering goods is a priority sector of the STPF, the Government of Pakistan should define annual budget allocations and supports to drive the industry growth. This commitment will demonstrate clear engagement towards strengthening the sector and encourage private partners to support development. In addition to national budget support, resource identification will require the Board of Investment to effectively target foreign investors in line with the strategy's priorities. Investment flows to Pakistan should also be considered as a valuable driver of strategy implementation and overall industry development.

The various implementation modalities detailed will determine the success of the strategy's implementation. However, high-level support from the government, in collaboration with strong championship by the private sector, will be the real driver of successful strategy implementation.

To achieve the vision and strategic objectives discussed, a robust, actionable and realistic strategic plan of action (PoA) is required. This is provided in the section below and constitutes the heart of this strategy.

The PoA is structured along the four strategic objectives and the operational objectives described above. For each objective, the PoA outlines detailed activities and their implementation modalities, which include:

- **Priority level:** Priority 1 being the highest and 3 the lowest.
- **Period:** The desired time-frame of the activity.
- **Reform or project:** Defines whether the activity entails a legal action.
- **Targets:** Quantifiable targets that allow completion monitoring of the activity during the implementation stage.
- **Leading implementing partners:** One single accountable lead institution per activity. (The institution can also have a technical role or can solely have an oversight and coordination role.)
- **Supporting implementing partners:** Any institution that should be involved at any stage of the activity's implementation.



©shutterstock

©shutterstock

PLAN OF ACTION (2023-2027)

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
Foster an enabling environment for the sector to grow and compete	1.1 Improve standards compliance in raw materials and finished products	1.1.1. Conduct an industry-wide standards and quality improvement awareness and certification programme, after identifying the priority aspects that need improvement for SMEs and informal sector suppliers.	1						Project	• Standards and quality improvement programme launched • At least 70% of SMEs and informal suppliers undergo the programme and receive certification	Pakistan Standards & Quality Control Authority	• Engineering Development Board
		1.1.2. Upgrade product quality testing and assurances facilities for raw materials.	1						Project/ reform	• Upgradation of quality testing facilities carried out • 60% of firms report a reduction in poor-quality raw materials	Pakistan Standards & Quality Control Authority	• Engineering Development Board
		1.1.3 Strengthen product quality assurance capabilities of relevant public and/or private sector institutions (through training) that provide such services.	3						Project	• Standardized training of personnel involved in quality assurance of raw materials for engineering developed • 50% of institutions providing these services enhanced the quality assurance capabilities	Pakistan Standards & Quality Control Authority	• Ministry of Industries & Production • Engineering Development Board
		1.1.4. Launch a programme to encourage, advise and finance domestic manufacturers (especially SMEs) to obtain international standard certifications to strengthen product and process upgrading and strengthen market entry prospects. This could include the introduction of rebate scheme to manage affordability of international standards for SME producers	2						Reform	• Programme to support obtaining international standards certification launched • Rebate scheme introduced on the costs of certification • Awareness of international standards certification requirements improves by 70% • At least 60% of firms (majority SMEs) obtain international standards certifications	Ministry of Industries & Production	• Pakistan Standards & Quality Control Authority • Engineering Development Board • Ministry of Science and Technology
	1.2. Address anomalies in the tax structure	1.2.1. Review current import duty structure to identify opportunities to streamline and reduce cases of double taxation.	1						Reform	• Duty structure streamlined/ adjusted	Federal Board of Revenue	• Engineering Development Board • Ministry of Commerce
		1.2.2. Review current anomalies in and introduce streamlined structure for sales tax.	1						Reform	• Sales tax structure streamlined/adjusted	Federal Board of Revenue	• Engineering Development Board

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
Foster an enabling environment for the sector to grow and compete	1.2. Address anomalies in the tax structure	1.2.3. Establish regular dialogue platform (as a sub-working group of the Sector Specific Council) between tax authorities and industry (via associations) to resolve ongoing procedural issues in tax (e.g. compliance delays and refunds, etc.) and improve tax policy stability.	2						Reform	• Two engagement sessions held per year • At least 70% of firms report improvement in tax compliance experience and procedural efficiency	Federal Board of Revenue	• Engineering Development Board • Pakistan Electric Fans Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Pakistan Automotive Manufacturers Association
	1.3 Improve access to a cost-effective energy supply	1.3.1 Introduce concessionary financing schemes for green energy installations.	3						Project	• Concessionary financing scheme for engineering goods sector introduced • At least 50% of firms in the sector have accessed the scheme for green energy installations	Ministry of Industries & Production	• Engineering Development Board • Ministry of Commerce • State Bank of Pakistan • Ministry of Energy, Power Division
		1.3.2 Provide electricity at a competitive tariff for the engineering goods sector	1						Reform	• Competitive electricity tariff for the sector introduced	Ministry of Industries & Production	• Engineering Development Board • National Electric Power Regulatory Authority (NEPRA)
Increase availability of skilled and competent labour	2.1 Improve sector-relevant vocational training	2.1.1. Conduct Pakistan-wide and province-wide skills gap assessment to understand the full extent of the labour demand shortage and emerging skill and labour requirements in the electric fans and automotive industries.	2						Project	• Skills gap assessment conducted and widely published	Engineering Development Board	• Pakistan Engineering Council • Pakistan Electric Fans Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Pakistan Automotive Manufacturers Association

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
Increase availability of skilled and competent labour	2.1 Improve sector-relevant vocational training	2.1.2 Introduce/expand specialized vocational training programme(s) for the electric fans sector using results of the skills gap assessment.	2						Project	• Technical and vocational education training (TVET) institutions introduce new dedicated programmes for electric fans	Technical Education & Vocational Training Authority	• Pakistan Electric Fans Manufacturers Association • Engineering Development Board
		2.1.3 Expand existing, or introduce new, specialized vocational training programme(s) for the automotive components manufacturer and assembly sector based on the results of the skills gap assessment.	2						Project	• Technical and vocational education training (TVET) institutions introduce dedicated programmes for automotive industries	Technical Education & Vocational Training Authority	• Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Engineering Development Board
	2.2 Expand the skilled labour pool	2.2.1 Establish a certification programme for specialized skills in the electric fans sector, which would then accredit existing providers of such training and enable trainees to obtain this established certification for use when applying for jobs.	3						Project	• Technical Education & Vocational Training Authority-endorsed specialized skill set programme introduced for electric fans	Technical Education & Vocational Training Authority	• Engineering Development Board • Pakistan Electric Fans Manufacturers Association
		2.2.2 Establish a medium-term certification programme for specialized skills in the automotive components manufacture and assembly sector, which would then accredit existing providers of such training and enable trainees to obtain this established certification for use when applying for jobs.	2						Project	• Technical Education & Vocational Training Authority-endorsed specialized skill set programme introduced for automotive components manufacture and assembly	Technical Education & Vocational Training Authority	• Engineering Development Board • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers
		2.2.3 Conduct provincial-level engineering goods occupation and careers workshops to improve youth understanding of opportunities in the sector and guide towards employment in the sector.	2						Project	• At least 20 provincial-level workshops held	Technical Education & Vocational Training Authority	• Pakistan Electric Fans Manufacturers Association • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Provincial departments

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
3. Strengthen technology upgrading and innovation	3.1. Improve access to and adoption of technology	3.1.1 Implement university–research–industry (URI) linkage programmes to forge partnerships between the electric fans sector firms and relevant technology institutions to drive product improvement and innovation.	1						Project	• At least three universities tie up with industry firm(s) or association • Firms report an increase in technology adoption attributable to URI linkages	Ministry of Industries & Production	• Engineering Development Board • Pakistan Electric Fans Manufacturers Association
		3.1.2 Implement URI linkage programmes to forge partnerships between the automotive manufacturing industry firms and relevant technology institutions to drive product improvement and innovation.	1						Project	• At least three universities tie up with industry firm(s) or association • Firms report an increase in technology adoption attributable to URI linkages	Ministry of Industries & Production	• Engineering Development Board • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers
		3.1.3 Introduce a structured internship programme to bring new talents and backgrounds into the automotive industries in order to spur new thinking and innovation in the engineering goods sector (from skills such as product design, process engineering and digitalization, etc.).	1						Project	• Sector-specific internship programme established • At least 10 firms per sector accommodate interns • At least 300 interns have participated in the programme	Pakistan Association of Automotive Parts & Accessories Manufacturers Pakistan Automotive Manufacturers Association	• Ministry of Commerce • Ministry of Industries & Production
		3.1.4 Introduce a structured internship programme to bring new talents and backgrounds into the electric fans industries in order to spur new thinking and innovation in the engineering goods sector (from skills such as product design, process engineering and digitalization, etc.).	1						Project	• Sector-specific internship programme established • At least 10 firms per sector accommodate interns • At least 300 interns have participated in the programme	Pakistan Electric Fans Manufacturers Association	• Ministry of Commerce • Ministry of Industries & Production
	3.2 Foster an enabling environment for innovation	3.2.1 Establish dedicated incubator facility (possibly in an engineering-focused college) co-funded by the industry to encourage design, process and product innovation in the electric fans sector.	2						Project	• Incubator facility established • At least two new innovations (product or process) receive domestic patent registration	Engineering Development Board	• Pakistan Electric Fans Manufacturers Association • Intellectual Property Organization of Pakistan

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
3. Strengthen technology upgrading and innovation	3.2 Foster an enabling environment for innovation	3.2.2. Establish a dedicated incubator facility (possibly in an engineering-focused college) co-funded by the industry to encourage design, process and product innovation in the automotive sector.	2						Project	• Incubator facility established • At least two new innovations (product or process) receive domestic patent registration	Engineering Development Board	• Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Intellectual Property Organization of Pakistan
		3.2.3. Introduce a time-bound and structured fiscal incentives regime to encourage in-house R&D and innovation among engineering goods firms.	1						Reform	• Incentives scheme introduced • In-house R&D and innovation investments increase by 25%	Ministry of Finance	• Engineering Development Board • Federal Board of Revenue • Pakistan Electric Fans Manufacturers Association • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers
4. Strengthen export promotion and market access	4.1. Enhance international presence and positioning of Pakistani engineering goods	4.1.1 Launch brand-building exercise to boost the image of Pakistani engineering goods products, after clear identification of selling propositions, competitor positioning and future orientations (including a greater focus on intellectual property protection and quality certification).	3						Project	• Brand-building programme launched and executed in at least five priority markets	Trade Development Authority of Pakistan	• Ministry of Industries & Production • Ministry of Commerce • Board of Investment
		4.1.2 Launch a focused investment attraction programme to forge FDI joint venture partnerships for Pakistani manufacturers to partner with recognized players and build greater scale of domestic manufacturers (building bigger, more competent firms).	1						Project	• At least five FDI joint ventures forged	Board of Investment	• Ministry of Industries & Production • Ministry of Commerce • Trade Development Authority of Pakistan

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
4. Strengthen export promotion and market access	4.1. Enhance international presence and positioning of Pakistani engineering goods	4.1.3 Identify a specific product segment in both automotive and electric fans sectors in which to grow a branded product and conduct a feasibility plan on developing and launching it.	2						Project	• Specific product segment identified • Feasibility plan conducted and findings disseminated to all industry players	Trade Development Authority of Pakistan	• Ministry of Industries & Production • Ministry of Commerce
	4.2. Focus on and accelerate export promotion efforts	4.2.1 Train Pakistan's commercial counsellors in international diplomatic missions on the new brand positioning, conduct information sessions and identify priority countries to work on in line with the STPF priorities.	1						Project/ reform	• Brand positioning included as a module in training of trade and investment officers (TIOs) • 60% of Pakistan engineering goods exporters report improved support from commercial counsellors	Pakistan Institute of Trade and Development (PITAD)	• Trade Development Authority of Pakistan • Pakistan Electric Fans Manufacturers Association • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Ministry of Commerce
		4.2.2 Identify and support engineering goods exporters to participate in the most relevant engineering goods international fairs and B2B opportunities.	2						Project	• Five trade fairs attended • 50 B2B matchmaking opportunities pursued	Trade Development Authority of Pakistan	• Trade Development Authority of Pakistan • Trade missions abroad • Ministry of Commerce • State Bank of Pakistan • Pakistan Electric Fans Manufacturers Association • Pakistan Automotive Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
4. Strengthen export promotion and market access	4.2. Focus on and accelerate export promotion efforts	4.2.3 For both automobiles and electric fans sub-sectors, develop and implement a detailed market entry plan for the Middle East and North Africa (MENA) region, including a specific approach on how to break into identified specific markets, regulatory conditions, listing of potential partners and holding B2B matchmaking, etc.	1						Project	• MENA market entry plan developed • At least 20 firms have won MENA region business	Trade Development Authority of Pakistan	• Ministry of Commerce • Trade missions abroad • Ministry of Industries & Production
		4.2.4 For both subsectors- automobiles and electric fan, develop and implement a detailed market entry plan for the European and US markets, including a specific approach on how to break into identified specific markets, regulatory conditions, listing of potential partners and holding B2B matchmaking, etc.	1						Project	• European market entry plan developed • US market entry plan developed • At least 10 firms have won new European and US market business	Trade Development Authority of Pakistan	• Ministry of Commerce • Ministry of Industries & Production • Trade missions abroad
		4.2.5 Improve capabilities in key government agencies (e.g. TDAP and Pakistan Engineering Development Board) through training and capacity building to promote the electric fans and automotive sector (including in conducting and providing market intelligence to the sector, and how to identify and support forging B2B linkages and other partners for sector growth, in collaboration with sector associations).	2						Project	• At least two rounds of government agency capability improvement programmes conducted • At least 50% of firms report improved relevance of services by relevant government agencies	Trade Development Authority of Pakistan	• Engineering Development Board • Pakistan Electric Fans Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Pakistan Automotive Manufacturers Association
		4.2.6 Improve firms' international marketing capabilities and capacitate internal teams for stronger export promotion and sales	1							• At least 25% of firms in each subsector have implemented internal training programmes to improve international marketing and promotions • Sector associations have facilitated at least one programme per year for the industry	Trade Development Authority of Pakistan	• Pakistan Electric Fans Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Pakistan Automotive Manufacturers Association

Strategic objective	Operational objective	Activity	Priority (1=Highest)	Period					Reform or project	Targets	Leading implementing partners	Supporting implementing partners
				2023	2024	2025	2026	2027				
4. Strengthen export promotion and market access	4.2. Focus on and accelerate export promotion efforts	4.2.7 Pursue increased usage of existing preferential trade arrangements as well as active industry engagement in identifying new preferential trade arrangements by enhancing the skills for a detailed review and negotiation of bilateral and multilateral agreements to enable competitive market entry conditions for Pakistani engineering goods exports in priority markets (e.g., in MENA region).	1						Project/ reform	• For engineering goods, usage of existing trade preferences in priority countries is increased by 30% • MoC conducts at least two sessions annually with industry players to identify their priorities to influence government's preferential trade arrangements/free trade agreement	Ministry of Commerce	• Trade Development Authority of Pakistan • Pakistan Electric Fans Manufacturers Association • Pakistan Association of Automotive Parts & Accessories Manufacturers • Pakistan Automotive Manufacturers Association
		4.2.8 Introduce export/project financing windows (including through government refinancing facilities or the Export Development Fund, etc.) for engineering goods firms to fund international market expansion.	2						Reform	• Dedicated project financing window introduced • At least 60% of engineering goods firms seeking export finance for international expansion activities receive it	Ministry of Industries & Production	• Ministry of Commerce • Trade Development Authority of Pakistan • State Bank of Pakistan

©shutterstock

ANNEXES

Annex I:
List of participants in the public–private consultations

Name	Designation	Organization
Abdul Hamid	Chief executive officer	Darson Industries (Pvt) Ltd
Sheraz Ahmad	Deputy general manager	Darson Industries (Pvt) Ltd
Muhammad Rashid	Manager, export sales	Darson Industries (Pvt) Ltd
Ihsan Mujtaba	Secretary general	PEFMA
Faisal Hayyat	Marketing executive	Precision Mates
Arslan Qureshi	Director	Starco Fans
Nabeel Ilyas	Director marketing	GFC Fans
Ashaq Paracha	Chief executive officer	Skyhigh Industries Pvt Ltd
Masood Syed	Assistant manager – manufacturing and development	Aftab Engineering Services
Mashood Khan	Director export	Mehran Commercial Enterprises
Muhammad Ali	Chief executive officer	Tamoor Fans Co.
Abdul Rehman Aizaz	Sr. vice chairman	PAAPAM
Shehryar Qadir	Vice chairman	PAAPAM
Fahd Rafiq		PEFMA
Shumaila Sikandar	Assistant director	TDAP
Asif Raza	Deputy director	TDAP
Muhammad Umar Riaz	Product officer – fans, home electrical appliances, mobile phones	TDAP
Usman Elahi	Product officer – automotive/auto parts	TDAP
Raffay Irfan	Design and production manager	Yunas Fans
Muhammad Aslam Khan	Assistant manager, parts quality and localization	MG Motor
Baqar Hussain	Head of sales	Thal Engineering
Bilal Ahmed	Director	Alpine Castings
Saad Sherani	Chief executive officer	Sherani Engineering
Muhammad Azhar Aslam	Chief executive officer	Belvin Fans (Bless Engineering Company)
Shahid Dad	Chief executive officer	Mannan Shahid Forgings Ltd
Syed Shoaib Bokhari	Manager, export	Ravi Autos Sundar
Aleena Ahmed	Quality assurance, quality control	Metaline Industries (Pvt) Ltd
Rizwan Ahmed	Director	Metaline Industries (Pvt) Ltd
Rashid Ashraf		Field International
Muhammad Salman Afzal	Owner	Champion Fans
Muhammad Faisal Afzal	Managing director	Super Asia Fans
Imran Ahmed	Owner	Kadkam Parts

Name	Designation	Organization
Hamid Razzaq	Managing partner	Razzaq Engineering
M. Shuja Ul Haq Siddiqui	Chief executive officer	Pak Orient Industries
Faisal Farooq	Director, business development	Standard Engineering Works (Pvt) Limited
Hashmi Syed Nabeel	CEO and chairman	Thermosole Industries (Pvt) Ltd
Ammar Khalid	Director – production and international Business	Ammarian Industry
Muhammad Saeed		SB Gears
Menahil Ahmad	Export manager	Ghauri Tyre & Tube (Pvt) Ltd
Mujtaba Quddus	Consultant	Japan International Cooperation Agency (JICA)
Sumair Ahmad	Research associate	Ministry of Commerce
Farzana Noshab	Economist	Asian Development Bank

Annex II:
Description of the key activities from the plan of action

STRATEGIC OBJECTIVE 1: FOSTER AN ENABLING ENVIRONMENT FOR THE SECTOR TO GROW AND COMPETE

Operational Objective 1.1: Improve standards compliance in raw materials and finished products

1.1.1. Conduct an industry-wide standards and quality improvement awareness and certification programme, after identifying the priority aspects that need improvement for SMEs and informal sector suppliers.

1.1.2. Upgrade product quality testing and assurances facilities for raw materials.

1.1.3 Strengthen product quality assurance capabilities of relevant public and/or private sector institutions (through training) that provide such services.

1.1.4. Launch a programme to encourage, advise and finance domestic manufacturers (especially SMEs) to obtain international standard certifications to strengthen product and process upgrading and strengthen market entry prospects. This could include the introduction of rebate scheme to manage affordability of international standards for SME producers.

All the above activities under the first operational objective are aimed at tackling a critical issue that was common to both the electric fans and automobile sectors and are widely emphasized by industry stakeholders, which is the issues in quality and reliability of raw materials and other upstream inputs in the manufacturing process. These activities will ensure that firms have a better understanding of the need for and avenues to improve quality testing of raw materials as well as finished goods manufacturers, will ensure that the national quality infrastructure is more geared towards this sector's needs, and will support firms to obtain necessary international testing and certifications required for international markets. Increasingly, quality and standards are becoming the major differentiator and competitive proposition in export markets and can even be a greater trade barrier than tariffs. Accordingly, any activity that boosts quality and standards compliance should be strongly supported in the sector's bid to improve international competitiveness.

Operational Objective 1.2: Address anomalies in the tax structure

1.2.1. Review current import duty structure to identify opportunities to streamline and reduce cases of double taxation.

1.2.2. Review current anomalies in and introduce streamlined structure for sales tax.

1.2.3. Establish regular dialogue platform (as a sub-working group of the Sector Specific Council) between tax authorities and industry (via associations) to resolve ongoing procedural issues in tax (e.g. compliance delays and refunds, etc.) and improve tax policy stability.

Current tax anomalies need to be resolved to ensure that they do not affect the industry's competitiveness. The above activities are aimed at both addressing immediate needs as well as more medium-term issues. Immediately, the focus should be on reviewing and resolving taxation with regarding to the import duty structure and sales tax, while a continual mechanism to reveal and resolve issues on an ongoing basis needs to be established for the medium term. The latter will ensure a building up of trust and understanding between tax authorities and industry players, which will enable better compliance for the authorities and smoother business operations for the firms in the sector.

Operational Objective 1.3: Improve access to a cost-effective energy supply

1.3.1. Introduce concessionary financing schemes for green energy installations

The future of the manufacturing facility engineering goods sector will necessarily rely on a steady, but firm transition to green energy, ranging from retrofitting

existing plants to be more efficient all the way to a complete transformation of the energy sources used – for example, rooftop solar and waste-to-energy projects. Especially with the growing global recognition for cleaner energy, emerging legislation in markets like the European Union regarding carbon pricing, and the onus by suppliers on manufacturers to prove greener credentials, Pakistani firms need to make this shift in order to be competitive in the changing global supply chain landscape. A critical element in this is timely and cost-effective financing for such installations. This activity is specifically aimed at introducing a cost-effective funding line to finance green energy installations such as rooftop solar, where the tenor of loans matches the project period and the interest rates involved are more concessionary in nature and help reduce the upfront investment costs.

1.3.2. Provide electricity at a competitive tariff for the engineering goods sector.

While the medium-term strategy to adopt green energy is undertaken, the immediate challenge of higher-than-affordable electricity tariffs needs to be addressed. This activity is strongly asserted by the industry players who expect a lower and predictable tariff that is competitive with Pakistan's regional peers in the industry. The exact rate in this activity is only given as an example or indicative, and would need to be finalized through a robust, evidence-based and time-bound public–private consultation process.

STRATEGIC OBJECTIVE 2: INCREASE AVAILABILITY OF SKILLED AND COMPETENT LABOUR

Operational Objective 2.1: Improve sector-relevant vocational training

2.1.1. Conduct Pakistan-wide and province-wide skills gap assessment to understand the full extent of the labour demand shortage and emerging skill and labour requirements in the electric fans and automotive industries.

It is often the case that, while industry players indicate the gaps in availability of human resources, there is little evidence of the exact nature of this gap – in terms of type of skills and quantity required today as well as in the near-term future. This activity is aimed at plugging this information gap and ensuring that plans to upgrade skill provision are informed by industry requirements. The assessment envisaged in this activity will provide robust data on the subject, and help the education and training sector as well as industry associations and individual businesses plan their initiatives better. Once the assessment is conducted, it must be widely publicized so that young people aspiring to jobs in the sector, government decision-making bodies, skills training institutions and firms understand the results.

2.1.2. Introduce/expand specialized vocational training programme(s) for the electric fans sector using results of the skills gap assessment.

2.1.3. Expand existing, or introduce new, specialized vocational training programme(s) for the automotive components manufacturer and assembly sector based on the results of the skills gap assessment.

These two activities are specifically aimed at vocational training for each of this strategy's two subsectors, recognizing that the skills requirements will be different for each, but also recognizing the urgent need to address the need for properly trained workers, without which the sectors' growth would be stifled. The introduction or expansion of specialized vocational training can be by both public and private sector providers, and the government and industry associations would need to jointly discuss the feasible options. Collaborations with international skills centres can also help accelerate the delivery of industry-relevant content (e.g. twinning a selected specialized vocational centre for automobiles in Pakistan with a centre in a key automobile manufacturing hotspot like Germany). Meanwhile, the exact specializations to offer for each subsector, both in the short and medium term (as the requirements dictate), can be informed by the previous activity, the national and provincial assessment.

Operational Objective 2.2: Expand the skilled labour pool

2.2.1. Establish a certification programme for specialized skills in the electric fans sector, which would then accredit existing providers of such training and enable trainees to obtain this established certification for use when applying for jobs.

2.2.2. Establish a medium-term certification programme for specialized skills in the automotive components manufacture and assembly sector, which would then accredit existing providers of such training and enable trainees to obtain this established certification for use when applying for jobs.

These two activities are aimed at building on from the previous activities and aimed specifically at introducing

credible and well-recognized certification programmes for each subsector. The purpose here is to build up a cohort of certified workers, recognized by any firm in the sector, enabling mobility of workers, but also predictability for employers. Over time, such a certification programme can benefit from international accreditation to boost recognition and enhance the profile of careers in this sector among Pakistani youth. Ultimately, the aim is to ensure that the skills upgrading and certification environment works alongside the engineering goods sector's plans and ambitions for enhanced competitiveness and innovation.

2.2.3. Conduct provincial-level engineering goods occupation and careers workshops to improve youth understanding of opportunities in the sector and guide towards employment in the sector.

As the sector expands and has the need to attract more workers, it is important to expand opportunities available for young people in an inclusive manner. Conducting provincial workshops and awareness seminars – led by the private sector – can help to excite young people on the opportunities available, give them a vision for where the sector is headed and the growth envisaged, and help guide them on the steps they need to take to be part of the sector.

STRATEGIC OBJECTIVE 3: STRENGTHEN TECHNOLOGY UPGRADING AND INNOVATION

Operational Objective 3.1: Improve access to and adoption of technology

3.1.1. Implement university–research–industry (URI) linkage programmes to forge partnerships between the electric fans sector firms and relevant technology institutions to drive product improvement and innovation.

3.1.2. Implement URI linkage programmes to forge partnerships between the automotive manufacturing industry firms and relevant technology institutions to drive product improvement and innovation.

The above two activities are aimed at addressing the current limited development of the innovation ecosystem for engineering goods, and expects to make initial steps to forge collaborations between players in the nascent ecosystem. It is widely recognized globally that technology upgrading in sectors can be strongly assisted by bringing research institutions (at universities and public research institutions) together with industries. These partnerships can take place at a pre-competitive stage at sector level (i.e. to solve common challenges and common technology needs across the sector) or at firm level (through bespoke programmes to solve a firm-specific challenge). A starting point is to bring together the groups so they can discover each other's needs and capabilities, and trigger collaborations. The PoA cannot predict or plan the exact nature of the collaborations and, therefore, only envisages conducting the linkage programme, to then let the sector, subsector or firm-level collaborations take place based on matching needs with capabilities. It should be an ongoing and periodic effort.

3.1.3. Introduce a structured internship programme to bring new talents and backgrounds into the automotive industries in order to spur new thinking and innovation in the engineering goods sector (from skills such as product design, process engineering and digitalization, etc.).

3.1.4. Introduce a structured internship programme to bring new talents and backgrounds into the electric fans industries in order to spur new thinking and innovation in the engineering goods sector (from skills such as product design, process engineering and digitalization, etc.)..

As the engineering goods sector has ambitions of greater innovation, technology deployment and digitization, etc., bringing in skills and talents from different disciplines will be vital. However, firms in the sector might not be able to or want to commit to hiring such resources right away. This activity is expected to provide a bridge to this by enabling internships as a method of introducing new skills and backgrounds to the firms in a structured and experimental way. Internships are a great way to help young people find their footing in a sector and get exposure, while also helping firms find and experiment with new talent before committing to longer-term contracts.

Operational Objective 3.2: Foster an enabling environment for innovation

3.2.1. Establish dedicated incubator facility (possibly in an engineering-focused college) co-funded by the industry to encourage design, process and product innovation in the electric fans sector.

3.2.2. Establish a dedicated incubator facility (possibly in an engineering-focused college) co-funded by the industry to encourage design, process and product innovation in the automotive sector.

Experimentation with products and processes will be key to the future advancement of the engineering goods sector, and providing safe and facilitative spaces for such experimentation is vital. Incubators provide this ideal space. These two activities envisage establishing dedicated incubators for the two subsectors, where the industry would play a lead role in their establishment, but receive financial and other support from the government. For example, the government could provide a suitable space rent-free (or encourage a national university to host it), while firms in the sector contribute equipment and technical and managerial know-how. Typically, incubators require full-time staff to curate and run them, and have a few motivated industry leaders guiding them in order to have the best impact and ensure industry relevance of the work. It is not just about establishing incubators with the right equipment and staff. They must have the right soft infrastructure as well, opening up seed financing windows for successful products coming out of the incubators, and establishing clear intellectual property, licensing, patenting and technology transfer guidelines.

3.2.3. Introduce a time-bound and structured fiscal incentives regime to encourage in-house R&D and innovation among engineering goods firms.

While encouraging 'open innovation' concepts through the incubators, it is natural for firms to also want to conduct specialized and propriety R&D in-house. To encourage this and spur the sector's technology advancement, this activity envisages introducing suitable fiscal incentives (primarily through taxation and matching grants) to support firms' in-house R&D. Especially in countries where public spending on R&D is low, the government has to incentive private spending on R&D. The reason for making these incentives time-bound (e.g. five years) is to accelerate firms' investment decisions today, rather than postponing them. Depending on the scheme's success, they can be considered for extension. In introducing such fiscal incentives, it is important to ensure that their eligibility and reporting criteria are as streamlined and as least-invasive as possible (through robust consultation between the industry and the tax authorities). Otherwise, the industry could be faced with cumbersome procedures that do not yield the expected results in terms of uptake. Taking time to structure and design a good regime, which is then implemented in a transparent and predictable manner, will be important.

STRATEGIC OBJECTIVE 4: STRENGTHEN EXPORT PROMOTION AND MARKET ACCESS

Operational Objective 4.1: Enhance international presence and positioning of Pakistani engineering goods

4.1.1. Launch brand-building exercise to boost the image of Pakistani engineering goods products, after clear identification of selling propositions, competitor positioning and future orientations (including a greater focus on intellectual property protection and quality certification).

As Pakistan's engineering goods exports are still at a nascent stage and only known by certain markets, industry stakeholders felt it important to embark on a brand-building exercise. To be clear, the objective of this activity is not to create a single brand of a firm or firms in the sector, but rather to build the overall branding of Pakistan's engineering goods and manufacturing capabilities in general. In order to get best value for money from such a campaign and ensure that the messages are targeting and compelling, it is important to first identify the unique selling propositions and calibrate the branding according to the space that Pakistan can occupy among the competitor landscape. This branding must then be widely communicated to and consistently adopted by all players in the industry when dealing with foreign partners, as well as by Pakistan's government officials and international diplomats (links to Activity 4.2.1).

4.1.2. Launch a focused investment attraction programme to forge FDI joint venture partnerships for Pakistani manufacturers to partner with recognized players and build greater scale of domestic manufacturers (building bigger, more competent firms).

An important aspect of advancing the sector's internal capabilities (technology, productivity and innovation) and external market access is to attract FDI and forge international partnerships. The industry would need to work with investment and trade promotion authorities such as the Board of Investment and the TDAP to identify the relevant markets to conduct investment missions in and also shortlist likely candidate firms to approach in a targeted and time-bound manner, accompanied by strong follow-up. The industry and the Board of Investment should work to create with pitch decks that credibly and attractively articulate the sector's competitiveness in Pakistan and future prospects, including featuring case studies of champion firms and

examples of existing foreign investors who have done well in the past. Part of the investment attraction programme could be the hiring of specialists in target markets, paid on a success fee model, tasked with forging the partnerships.

4.1.3. Identify a specific product segment in both automotive and electric fans sectors in which to grow a branded product and conduct a feasibility plan on developing and launching it.

This activity takes the broader brand-building effort of 4.1.1 further by exploring the possibility of introducing and building a specific branded product internationally, in either the automobile or electric fans sector. In this, it is important to bear in mind the significant time and financial resources that would be required. Therefore, it must follow a disciplined approach, with a willingness to make compromises and smart choices (choosing a product segment from automobiles and not electric fans, for example, or vice versa). It is not yet evident which segment of which sector would be the best candidate for it, and initial steps must be made to embark on feasibility, especially if public financial resources are to be used for it. Hiring of experts to help identify the possibilities – those with familiarity of the competitor landscape and what it takes to bring a domestic brand global – could potentially be subsidized by the state.

Operational Objective 4.2:
Focus and accelerate export promotion efforts

4.2.1. Train Pakistan's commercial counsellors in international diplomatic missions on the new brand positioning, conduct information sessions and identify priority countries to work on in line with the STPF priorities .

Pakistan's international diplomatic presence can be a key agent for international marketing, and the first step is to educate them on the sector's positioning, the type of firm-level capabilities available, examples of champion firms, new innovations being done in Pakistan and other strengths. This will help them better advocate for the sector in the markets they are stationed in and equip them with the tools needed to forge better linkages either for export orders or investment deals. The initiative should be taken by the industry associations, and partner with the foreign ministry and the TDAP to execute.

4.2.2. Identify and support engineering goods exporters to participate in the most relevant engineering goods international fairs and B2B opportunities.

4.2.3. For both automobiles and electric fans sub-sectors, develop and implement a detailed market entry plan for the Middle East and North Africa (MENA) region, including a specific approach on how to break into identified specific markets, regulatory conditions, listing of potential partners and holding B2B matchmaking, etc.

4.2.4. For both subsectors- automobiles and electric fan, develop and implement a detailed market entry plan for the European and US markets, including a specific approach on how to break into identified specific markets, regulatory conditions, listing of potential partners and holding B2B matchmaking, etc.

4.2.5. Improve capabilities in key government agencies (e.g. TDAP and Pakistan Engineering Development Board) through training and capacity building to promote the electric fans and automotive sector (including in conducting and providing market intelligence to the sector, and how to identify and support forging B2B linkages and other partners for sector growth, in collaboration with sector associations).

The above activities are all aimed at strengthening the understanding of what it takes to enter priority markets and planning precise steps for such entry. Based on information from the industry associations, firm-level requests and the TDAP's own identification, the sector should select relevant fairs and B2B opportunities on an ongoing basis to showcase the sector and build new business. If public resources are to be spent, careful assessment of the most relevant and impactful opportunities should be done and prioritized. This will also accompany the activities relating to market-specific entry plans in identified priority markets like MENA, Europe and/or the United States (depending on consultations within the industry). These entry plans are very focused and time-bound, with clear steps identified for each stakeholder. Often, such market entry plans would require commercial input from experts in the target market, and cannot be developed by a group based in Pakistan alone. Government trade promotion authorities like the TDAP and EDB can consider co-financing the formulation of such plans, as they would be too resource-intensive for the industry alone to bear (let alone an individual or a small group of firms). Meanwhile, building up in-house capabilities for such market intelligence over time should be pursued so that they can be provided on a continual basis and at lower cost.

4.2.6. Improve firms' international marketing capabilities and capacitate internal teams for stronger export promotion and sales.

Using the preferences in Pakistan's existing free trade agreements for the benefit of engineering goods sector products can provide a quick win to boost exports. The TDAP and MoC can help identify underuse and guide firms on opportunities available, while simultaneously addressing any bilateral trade barriers (especially non-tariff measures) that could be causing underuse. Meanwhile, the industry and trade authorities should come together to identify the most relevant trade agreements (and inform the offensive interests lists in ongoing negotiations) for growing the engineering goods sector's exports.

4.2.8 Introduce export/project financing windows (including through government refinancing facilities or the Export Development Fund, etc.) for engineering goods firms to fund international market expansion.

Financing international expansion can often be risky and have timing mismatches that affect firms' cash flows, and this particularly affects SME exporters that have less capital buffers. As such, introducing specialized export and project financing windows that help ease these constraints will be important. The industry and government must work with the banking sector to introduce these, as new financing facilities or dedicated windows under existing facilities. This should include strengthening export credit insurance as well.

©shutterstock

REFERENCES

Benchmark Mineral Intelligence. Accessed at https://www.benchmarkminerals.com.

Bloomberg (2020). 'Electric Fans Market will Showcase Negative Impact during 2020-2024: Demand For Premium Appliances to Boost the Market Growth'. Available from https://www.bloomberg.com/press-releases/2020-10-02/electric-fans-market-will-showcase-negative-impact-during-2020-2024-demand-for-premium-appliances-to-boost-the-market-growth.

Board of Investment (2021). 'Sector Profile: Automotive and Auto-parts manufacturing'. Available from https://invest.gov.pk/automobiles#gallery.

Cao, Sissi (2021). 'Panasonic, GM Show Off Cutting Edge Electric Vehicle Batteries, Cobalt-Free'. *Observer*. Available from https://observer.com/2021/01/electric-vehicle-battery-cobalt-free-gm-panasonic/.

Council on Foreign Relations (2020). 'Why Cobalt Mining in the DRC Needs Urgent Attention'. CFR blog. Available from https://www.cfr.org/blog/why-cobalt-mining-drc-needs-urgent-attention.

Dawn newspaper (2021). *Fan manufacturers demand curbs on scrap export to China*. Available from https://www.dawn.com/news/1623427.

Engineering Development Board (EDB) (2016). *Automotive Development Policy, 2016-21*. Accessed at http://engineeringpakistan.com/automotive-development-policy-2016-21/.

Economist Intelligence Unit (2021). 'Automotive Development Policy 2016-21'. Available from https://www.eiu.com/industry/automotive.

eBike News (2021). 'EBike trends'. Accessed at https://ebike-news.de.

Euromonitor (2021). 'Air Treatment Products Global Market'. Accessed at https://www.euromonitor.com/air-treatment-products.

Fresh Energy (2021). 'What's up with the cobalt used in EV batteries?' Available from https://fresh-energy.org/whats-up-with-the-cobalt-used-in-ev-batteries.

Grand View Research (2020). 'Ventilation Fan Market Size Worth $3.85 Billion By 2025'. Available from https://www.grandviewresearch.com/press-release/global-ventilation-fan-market.

International Organization of Motor Vehicle Manufacturers (OICA) (2017). '2017 Production Statistics'. Available from https://www.oica.net/category/production-statistics/2017-statistics/.

International Trade Centre (2021). Trade Map online database. Available from https://www.trademap.org/Index.aspx.

International Trade Centre (n.d.). 'Sectional Summaries - Electric Fans'. Pp 10–11. In 'Trade of Industrial Goods with India: Opportunities and Challenges for Pakistan'. Available from http://www.indiapakistantrade.org/pdf/Trade%20of%20Industrial%20Goods%20with%20India%20Opportunities%20and%20challenges%20for%20Pakistan.pdf.

KPMG (2017). 'Global Automotive Executive Survey 2017'. Available from https://home.kpmg/me/en/home/insights/2017/01/global-automotive-executive-survey-2017.html.

Kamal, M. and Usman, Khan (2011). 'Fan Industry in Gujrat and Gujranwala: An SME Cluster Study'. Available from https://docplayer.net/16676644-Dprc-working-paper-fan-industry-in-gujrat-gujranwala-an-sme-cluster-study.html.

Ministry of Commerce of Pakistan (2017). *Look Africa Policy Initiative.* Available from https://www.commerce.gov.pk/look-africa-policy/.

Pakistan Automotive Manufacturers Association. *Interviews with key members*.

PricewaterhouseCoopers (2019). 'Five trends transforming the Automotive Industry'. Available from https://www.pwc.com/gx/en/industries/automotive/publications/eascy.html.

Punjab Skills Development Fund (2015). 'Upskilling Punjab's Fan Industry Cluster'. Available from https://www.psdf.org.pk/wp-content/uploads/2018/11/FAN-Final.pdf.

Small & Medium Enterprise Development Authority (2012). 'Cluster Profile: Electric Fans – Gujranwala'. Available from https://smeda.org/phocadownload/Punjab/cluster_profiles/fan%20cluster%20-%20%20gujranwala.pdf.

The Guardian (2021). *'Like slave and master': DRC miners toil for 30p an hour to fuel electric cars.* Available from https://www.theguardian.com/global-development/2021/nov/08/cobalt-drc-miners-toil-for-30p-an-hour-to-fuel-electric-cars.

Trade Development Authority of Pakistan (n.d.) 'Engineering Division's Report on Fan Industry of Pakistan'. Available from https://www.coursehero.com/file/26133275/Report-on-fan-industry-in-Pakistanpdf/.

Technavio (2021). 'Over $ 2 Billion Growth in Global Electric Fans Market 2020-2024 | 41% Growth to Originate in APAC'. Available from https://www.prnewswire.com/news-releases/over--2-billion-growth-in-global-electric-fans-market-2020-2024--41-growth-to-originate-in-apac--technavio-301241941.html.

World Bank (n.d.). 'Changing mining practices and greening value chains for a low carbon-world'. Available from https://www.worldbank.org/en/news/feature/2019/10/07/changing-mining-practices-and-greening-value-chains-for-a-low-carbon-world.

Wyman, Oliver (2018). '*Automobilindustrie vor stürmischen Zeiten*' ('Automotive industry in stormy times'). Available from https://www.ots.at/presseaussendung/OTS_20180517_OTS0089/automobilindustrie-vor-stuermischen-zeiten.

This document has been produced
with the financial support
of the Foreign, Commonwealth
& Development Office

With technical support from ITC

International Trade Centre

GOVERNMENT OF PAKISTAN
MINISTRY OF COMMERCE

Government of Pakistan
Ministry of Industries & Production

Pakistan Association of Automotive Parts & Accessories Manufacturers

PEFMA

TDAP

UKaid
from the British people