

WHY INVEST IN TURKISH MACHINERY INDUSTRY?







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Growth Drivers in Turkey

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EXECUTIVE SUMMARY

TURKEY HAS A GROWING MACHINERY INDUSTRY OFFERING OPPORTUNITIES IN MANY AREAS...

FAVORABLE INVESTMENT ENVIRONMENT Strong macroeconomic growth with increasing income per capita and a bourgeoning middle class Favorable demographics with a dynamic, young and skilled labor force supporting the industry Cost-competitive labor and energy prices

Strong government support through manufacturing and R&D incentives

STRONG INTERNATIONAL PRESENCE

Global machinery companies have been present in Turkey with significant manufacturing activities, using Turkey as a hub to access regional markets

Successful partnerships with local companies to grow in the region, capitalizing on locals' experience and networks

LUCRATIVE OPPORTUNITIES IN SUB-SECTORS

ROBUST GROWTH

ample opportunities in agricultural machinery, construction & mining machinery, energy equipment such as electric motors & turbines, food processing & packaging machinery, HVAC, lifting & handling equipment, metalworking & machine tooling, pumps & compressors, textile machinery

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World-scale domestic demand and strong industrial base offer

- Turkish machinery industry has been robustly growing over the past decade with approx. 5% CAGR
- Customer industries, such as plastic & rubber, automotive, construction, textile and electrical machinery are robustly growing and therefore further supporting the growth of machinery sector
- Export opportunities due to Turkey's proximity to regional markets



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TURKISH MACHINERY SECTOR HAS MORE THAN **QUADRUPLED ITS REVENUES TO USD 23 BILLION AND** DOUBLED ITS WORKFORCE TO 244K OVER THE PAST DECADE

TURKISH MACHINERY INDUSTRY



Source: Turkish Statistical Institute Industry & Services Statistics NACE Rev2 Division 28, Central Bank of Republic of Turkey

SUSTAINABILITY OF GROWTH IN CUSTOMER INDUSTRIES DRIVING TURKEY'S MACHINERY INDUSTRY...

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TURKEY'S EXPORTS HAVE GROWN FIVE TIMES SINCE 2003, MAKING IT ONE OF THE TOP PERFORMERS IN THE WORLD MACHINERY TRADE



FOREIGN TRADE

PROXIMITY TO KEY MARKETS

TURKEY IS WELL CONNECTED WITH THE REGION THROUGH CUSTOMS UNION WITH THE EU AND FREE TRADE AGREEMENTS WITH 28 COUNTRIES

TURKEY HAS GEOGRAPHICAL PROXIMITY TO SOME OF THE HIGHEST GROWTH MARKETS IN MACHINERY AND IS CONVENIENTLY POSITIONED AS A MANAGING AND MANUFACTURING HUB

IMPORT NUMBERS (IN BILLION \$)



TURKEY FULLY COMPLIES WITH THE EU TECHNICAL LEGISLATIONS SINCE 2002, WITH ALL CONFORMITY ASSESSMENTS IN LINE WITH EU REGULATIONS

Source: UN Comtrade HS Code 84, Turkey has signed Free Trade Agreements (FTA) with Albania, Bosnia-Herzegovina, Chile, Egypt, Faroe Islands", Georgia, Ghana", Iceland, Israel, Jordan, Kosovo", Lebanon", Macdonia, Malaysia, Mauritius, Montenegro, Moldova", Morocco, Norway, Palestine, Serbia, Singapore", South Korea, Switzerland and Lichtenstein, Syria, Tunisia. ('to be ratified). **FOREIGN TRADE**

TURKEY HAS ALMOST TRIPLED ITS IMPORTS TO USD 28 BILLION AND NOW IS THE 24TH LARGEST IMPORTER IN THE WORLD



MAJOR PLAYERS

THERE ARE OVER 16K COMPANIES IN TURKISH MACHINERY SECTOR WHERE BOTH LOCAL AND INTERNATIONAL PLAYERS ARE ACTIVE





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ROBUST ECONOMY

TRACK RECORD GROWTH AND BRIGHT FUTURE WITH PROVEN RESILIENCE



BOURGEONING MIDDLE CLASS

TURKEY'S ECONOMIC GROWTH HAS PAVED THE WAY FOR EMERGENCE OF A SIZEABLE MIDDLE-CLASS...

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Source: IMF, TurkStat, Euromonitor

FAVORABLE DEMOGRAPHICS





...HALF OF POPULATION UNDER AGE 30



Source: Turkstat, Eurostat, UN, 2016

TURKEY'S EDUCATION SYSTEM UPGRADED TO SUPPORT A SKILLED LABOR POOL..

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Source: Ministry of National Education, Council of Higher Education, Turkstat

SKILLED & COST-COMPETITIVE LABOR FORCE



AVAILABILITY OF QUALIFIED ENGINEERS, 2018 (10=Available; 0=Unavailable)





LABOR COST PER HOUR IN MANUFACTURING (\$), 2018



AVAILABILITY OF COMPETENT SENIOR MANAGERS, 2017 (10=Available; 0=Unavailable)



REMUNERATION OF MANAGEMENT/ENGINEER

Total base salary plus bonuses and long-term incentives

^{\$}K, 2017



COMPETITIVE ENERGY PRICES

ELECTRICITY AND NATURAL GAS PRICES IN TURKEY HAVE BEEN COST COMPETITIVE IN COMPARISON WITH THE EU...

Electricity Prices for Household Consumers, H2 2018 (EUR per kWh)





Natural Gas Prices for Non-Household Consumers, H2 2018 (EUR per kWh)



INCENTIVES

MACHINERY SECTOR INVESTMENTS AND R&D ARE CONSIDERED AS PRIORITY INVESTMENTS AND CAN BENEFIT FROM VARIOUS LUCRATIVE INCENTIVES..



Tax Deduction: Reduced tax rates for investor's income (50-90 %) until the total deduction reaches a certain percentage of capex. (15-65 % of capex, in the case of project based incentives up to 200% of capex). For R&D investments, all R&D expenditures are deducted from tax base.

VAT Exemption: Investment machinery and equipment imported and/or locally provided within the scope of the incentive certificate will be VAT exempt.

Customs Duty Exemption: Investment machinery and equipment imported within the scope of the incentive certificate will be customs duty exempt.

Interest Rate Support: For investment loans, a certain portion of the interest share will be covered by government. (3-7 % points for TRY-denominated, 1-2% points for forex-denominated loans) (500K-900K TRY).

Land Allocation: Government land will be allocated for the investments, if no land is available in OIZs.

Income Tax Withholding Exemption will provide exemption from income tax withholding (only for Region 6).

	Incentive Schemes					
Main Incentive Tools	General Incentives	Regional Incentives	Incentives for Large Scale Investments	Incentives for Strategic Investments	Project-Based Incentives	R&D Incentives
Corporate Tax Reduction		•	•	•	•	•
VAT/Custom Duty Exemption	•	•	•	•	•	•
Social Security Premium Support		•	•	•	•	•
Income Tax Withholding Support*	•	•	•	•	•	•
Interest Support**		•				
Land Allocation		•	•		•	
Partnership (Equity Investment by Gov.)					•	
Guarantee of Purchase by Gov.					•	
Energy Cost Support					•	

*Provided that investments, except R&D, are made in Region 6, **(****Provided that investment, except R&D, are made in Regions 3, 4, 5 or 6 within the frame of the Regional Incentive Scheme Souce: Ministry of Economy, MST1

INCENTIVES THROUGH INNOVATION LIFECYCLE





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TURKEY OFFERS SOLID FUNDAMENTALS TO MAKE PROFITABLE INVESTMENTS IN THE MACHINERY SUB-SECTORS

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TURKEY'S AGRICULTURAL MACHINERY MARKET HAS REACHED TO USD 2.1 BILLION IN 2018 - 4TH IN EUROPE

KEY FACTS

- **Strong industrial base** over 10% share in Europe's production with **over 48K** units in 2018
- Strong local market largest tractor sales in Europe, 5th in the world, 75% of the local market supplied by local players
- Over 70% of the imports are higher-value tractors and harvesting machinery – investment opportunity for production
- Tractor manufacturing ecosystem with local and international players with a total of **5K employees**



TURKEY'S AGRICULTURAL MACHINERY EXPORTS ALMOST TRIPLED IN 10 YEARS..

Exports (Billion USD)



..AND 2 OUT OF 3 TRACTORS GOES TO USA & ITALY



TURKEY'S CONSTRUCTION MACHINERY MARKET HAS REACHED USD 1.7 BILLION IN 2018 – 7TH IN EUROPE, 11TH IN THE WORLD

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KEY FACTS

- Strong local market 3rd largest growth in the world after China and India for the last eight years
- · Local and international companies exist local market supplied by 35% local production and 65% import
- Europe's 10th largest manufacturing base with strong players, USD 1.4 billion production and USD 1.2 billion of exports in 2018
- Strong & international supplier base Construction machinery industry can benefit from the supplier base of automotive manufacturing industry in Turkey, which is a European manufacturing hub and has reached **1.7 million** units
- Local demand driven by public infrastructure and urbanization projects opportunity for smaller sized construction machinery
- Access to international markets enabled through Turkish construction companies 46 contractors in ENR250 list



TURKEY INVESTED USD 100 BILLION TO INFRASTRUCTURE PROJECTS IN THE LAST 5 YEARS..



..ANOTHER USD 325 BILLION IS EXPECTED BY 2023



TURKEY'S ENERGY EQUIPMENT (ELECTRIC MOTORS & TURBINES) MARKET HAS REACHED USD 3.6 BILLION IN 2018

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KEY FACTS

- 5th largest electricity market in Europe; highest growth in Europe with 5.3%
- Over USD 75 billion of energy investments made in the last 10 years
- Electricity demand and supply to grow by 50% by 2030 renewable and local energy resources are priorities
- Opportunities in production of wind/hydro/steam turbines and generators

WIND 10GW by 2020; 7.3GW total in 2018 USD 250 million of wind turbine imports in 2018 – 70% decrease since 2016 YEKA tender for 1GW made in 2017; winning consortium is Siemens - Turkerler-Kalyon at 3.48c/kWh with local production required	GEOTHERMAL & BIOMASS 1.3GW geothermal & 500MW biomass in 2018; 600MW geothermal in the pipeline USD 55 million of steam turbine imports in 2018 – 80% decrease since 2016	SOLAR 10GW by 2030; 5GW total in 2018 75% of solar panel imports are from Asia YEKA tender for 1GW was made in 2017; winning consortium is Hanwha QCells- Kalyon at 6.99c/kWh with local production required	ELECTRIC MOTOR USD 787 million of electric motor & generator imports in 2018 - 60% from China, Germany, Italy and Slovakia
HYDRO	NUCLEAR	COAL	
34GW by 2023; 29GW total in 2018	3 nuclear power projects by 2023	10GW lignite, 8.8GW imported coal	
USD 9 million of hydro turbine imports in 2018 - 80% decrease since 2016	Akkuyu and 2nd nuclear project will lead to USD 16 billion of products & service sales	18.5GW new capacity for lignite to be developed via PPAs	
	Nuclear supply chain in Turkey to develop through international partnerships	Lignite power projects are supported via capacity payments, PPAs and tax cuts	

Source: MAKFED analysis 2018 values, Ministry of Energy, Investment Office analysis, press excerpts, Comtrade HS 850231, 8410, 8406, 840690, 840290, 854140, 8501

FOOD PROCESSING & PACKAGING MACHINERY

TURKEY'S FOOD PROCESSING & PACKAGING MACHINERY MARKET HAS REACHED USD 800 MILLION IN 2018

KEY FACTS

- Strong industrial base with a production value of USD 1 billion clustered in Istanbul, Konya, Ankara, Gaziantep and Izmir
- Demand driven by the strong packaged food and beverages market in Turkey – USD 11 billion export in 2018
- USD 400 million of import in 2018 major imports are machinery for industrial preparation of food or drink, for treating material by heat change and machinery for filtering or purifying water
- Turkey is a manufacturing base for international food giants like Unilever, Kraft, Nestle, Danone, Ferrero with over 15K employees



TURKEY'S FOOD PROCESSING & PACKAGING MACHINERY EXPORTS TRIPLED IN 10 YEARS





...WHERE 80% OF EXPORTS ARE MACHINERY FOR

- Processing & milling of grains and cereals
- Industrial preparation of food or drink
- Milking machines and dairy machinery

...AND TOP5 EXPORT MARKETS ARE

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- Algeria
- Iraq
- Uzbekistan
- Sudan
- Kazakhstan

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KEY FACTS

- Strong industrial base USD 3.2 billion in value Europe's manufacturing base for panel radiator, boiler and AHU's
- Strong local market Europe's 3rd largest split AC market with 1M units and VRF market with 250K units
- Strong local market Europe's 4th largest with 1.3M boiler units
- Demand driven by construction in residential market; efficiency regulations and development in technology in non-residential market
- VRF market has grown 6 times with imports opportunity for high-tech production
- Access to international markets through Turkish construction companies 46 contractors in ENR250 list





HVAC



LIFTING & HANDLING EQUIPMENT

TURKEY'S MARKET FOR LIFTING & HANDLING EQUIPMENT HAS REACHED USD 2.4 BILLION IN 2018

KEY FACTS

- Strong industrial base USD 1.7 billion of production in 2018
- Local and international players mostly based in Istanbul, Kocaeli, Bursa, Ankara, Konya, Kayseri and Izmir
- Strong supplier base expertise in automotive, machinery and electronics & control systems
- 3rd largest elevator market in the world with 30K new units -ThyssenKrupp, Otis, Kone, Schindler, Hyundai present with some level of assembly operations
- **2nd largest** escalator and moving walk market in the world with 2K new units per year
- Opportunity for assembly and manufacturing of parts
- Strong local market demand driven by the growth in the industry and infrastructure & construction projects



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TURKEY'S PRODUCTION OF LIFTING & HANDLING EQUIPMENT HAS INCREASED BY 40% SINCE 2010..

...AND EXPORTS HAVE REACHED USD 370 MILLION IN 2018 -AN IMPRESSIVE 60% GROWTH IN TWO YEARS

> USD 1.1 BILLION IMPORT IN 2018 - ALMOST 70% FROM CHINA, GERMANY & ITALY



Production (Billion USD)



TURKEY'S METALWORKING & MACHINE TOOLING MARKET HAS REACHED TO USD 2.6 BILLION – 11TH LARGEST IN THE WORLD

KEY FACTS

- Strong industrial base largest in Central and Eastern Europe with USD 1.6 billion of production in 2018
- Strong in laser machine tools, forging & punching machine tools (including presses) 80% of the exports
- Exports have reached USD 855 million in 2018 30% growth in the last two years – industry diversifying its export markets to USA, Canada, Mexico, Brazil and India
- Over 40% of the USD 1.8 billion import in 2018 is for machining centers, transfer machines and lathes mostly from Germany & Italy
- Investment opportunity for CNC tools supplier base for CNC tools exist



TURKEY'S METALWORKING & MACHINETOOLING MANUFACTURING DOUBLED SINCE 2009



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Source: TIAD, MAKFED analysis 2018 values, press excerpts, Comtrade HS 8456, 8457, 8458, 8459, 8460, 8461, 8462, 8463, 8464, 8465, 8466, 8467, 8468 1

TURKEY'S MARKET FOR PUMPS & COMPRESSORS HAS EXCEEDED USD 2.2 BILLION IN 2018

KEY FACTS

- Industrial base USD 1.1 billion of production in 2018; mostly based in Istanbul, Konya and Izmir
- Majority of the companies are small-sized over 9K employees in 500 companies
- Strong local market demand driven by the growth in the industries, municipal infrastructure investments, construction and agriculture



TURKEY'S **PRODUCTION OF PUMPS &** COMPRESSORS HAS INCREASED BY 50% SINCE 2010

TURKEY HAS USD 2 BILLION OF IMPORTS WHERE EUROPE HAS AROUND 60% SHARE:

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Production (Billion USD)

0.9

2011

0.6

2010

0.8

.. AND EXPORTS HAVE

REACHED ALMOST

\$1 BILLION WHERE EUROPE & USA HAVE A

50% SHARE

TEXTILE MACHINERY

KEY FACTS

TURKEY'S

IN TEXTILE

MACHINERY

CATEGORIES

COMPETITIVENESS

- Strong industrial base especially in knitting and dyeing & . finishing machines
- Demand driven by textile industry Turkey is the 7th largest • textile exporter with USD 10.5 billion in 2018
- Due to high cost pressure from Asian countries, Turkey's • textile industry needs to specialize and increase its addedvalue while upgrading or renewing its USD 25 billion machinery park - technical textile is an example

SPINNING

Switzerland.

TURKEY'S TEXTILE MACHINERY MARKET HAS REACHED USD 2.2 BILLION IN 2018

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TURKEY'S TEXTILE MACHINERY EXPORTS TRIPLED IN 10 YEARS -**STILL LOW COMPARED TO \$1.9 BILLION OF IMPORTS**





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SUCCESS STORIES

MACHINERY GIANTS HAVE BEEN INVESTING IN TURKEY FOR DECADES

- Mahindra Farm Equipment (M&M) part of the USD 19 billion Mahindra Group based in India
- Had a revenue of USD 14 billion in 2017
- Manufacturing tractor cabins & industrial components, foundry, engines and transmission
- Operational with 865 employees in three facilities at Hisarlar, 355 employees in two facilities of Erkunt, and owns an R&D center
- · Uses Turkey as a regional hub for Turkey, the Middle East, CIS and Europe
- Acquired 75% of Hisarlar Makina at USD 19 million in 2017

- Established in Germany in 1958, its products include plant and equipment for concrete production, truck mixers, plastering machines, concrete injectors and concrete pumps
- Acquired by Chinese competitor Sany Heavy Industries for USD 402 million in 2012
- Manufacturing concrete pumps and mechanical and hydraulic distributors at its Cerkezkoy plant since 2008

- IHI Corporation Japanese corporation that produces ships, aircraft engines, turbochargers, industrial machines, power station boilers and suspension bridges
- Had a revenue of USD 14 billion in 2017 with 30K employees
- Completed projects in Turkey include Golden Horn Bridge, Fatih Sultan Mehmet Bridge, Osman Gazi Bridge and several reinforcement projects
- Formed a JV with Dalgakiran Makine with an investment of USD 14.4 million to produce turbo compressors in Turkey in 2018 (60 employees)
- Uses Turkey as a base for exports to Europe, the Middle East, and other growing markets

CANDY

FEDERAL-MOGUL
 POWERTRAIN

Putzmeister

- Established in Italy, its products include washing appliances, built-in and small domestic appliances. Had a revenue of 1.1 Billion in 2017
- Manufacturing in Turkey since 2007 at its Eskisehir plant
- Invested EUR 15 Million for the launch of a new plant in Turkey with an employment of 300 people
- Uses Turkey plant as a base for oven and stove manufacturing, built-in appliances and dryers and exports over 90% of its production

IHI

- Japanese multinational electronics and electrical equipment manufacturing company with a total revenue of USD 39 billion in 2017
- Operational in Turkey since 2012 especially in air conditioning, elevators and escalators, factory automation systems, visual information systems and transportation systems as well as electrification
- In 2018, opened its first air-conditioner manufacturing plant of Europe in Turkey with an investment of USD 80 million

- Established in the USA in 1899, its products include pistons, rings&liners, valve seats&guides, engine bearings and sealing
- Had a revenue of USD 7.3 billion in 2014
- Operational in Turkey since 1998, currently has two facilities with a total
 employment of 1600 people
- Has invested a total of EUR 400 million in Turkey by 2017
- 80% of the piston production is exported to Europe and USA as original equipment

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