BI Norwegian Business School

SIEMENS & VESTAS - WIND MERGER OF THE DECADE?

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Boreas Advisory

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Table of Contents

List of Abbreviations

Abbreviation	Explanation	Abbreviation	Explanation	Abbreviation	Explanation
AEP	Asset earning power	EUR	The euro	Nr	Number
ASP	Average selling price	EV	Electric vehicle; Enterprise Value	NWC	Net Working Capital
AVG	Average	FCF	Free cash flow	OEM	Original equipment manufacturer
bn	Billion	FY	Fiscal year	OMX C25	OMX Copenhagen 25
bp	Base points	G&A	General and administrative	OPEX	Operational expenses
CAGR	Compound annual growth rate	GE	General Electric	PV	Photovoltaic or present value
CAPEX	Capital expenses	GW (GWh)	Gigawatt (Gigawatt hours)	Q	Quarter
CCR	Cash Conversion Ratio	HHI	Herfindahl-Hirschman Index	R&D	Research & Development
CDP Climate	Carbon Disclosure Project ranking	LTM	Last twelve months	ROA	Return on assets
COGS	Cost of goods sold	ISS ESG	Institutional Shareholder Services ESG ranking	ROCE	Return on capital employed
COP26	26th UN Climate Change Conference of the Parties	IT	Information technology	ROE	Return on equity
Covid-19	Corona Virus Disease 2019	k	Thousand	S&M	Sales & Marketing
CRG	Credit Risk Grading	kW (kWh)	Kilowatt (Kilowatt hours)	S&P BSE	Standard & Poor's Bombay Stock Exchange Sensitive Index
CSR	Corporate Social Responsibility	m	Meter	S&P Global DJSI	Standard & Poor's Global Dow Jones Sustainability Indices
D&A	Depreciation and amortization	M	Million	SI	Smart Infrastructure
DCF	Discounted Cash Flow	M&A	Mergers & Acquisitions	SM&GA	Sales, Marketing, General and Administrative
DI	Digital industries	Max	Maximum	TV	Terminal value
DKK	Danish krone	Min	Minimum	TWh	Terawatt hour
EBIT	Earnings Before Interest and Taxes	MSCI	Morgan Stanley Capital International	UK	The United Kingdom
EBITA	Earnings Before Interest, Taxes and Amortization	Mt	Million tones	UN	United Nations
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization	MTMR	My Team My Responsibility	US	The United States of America
EMEA	Europe, Middle East, and Africa	n/a	Not applicable; not available	USD	United States dollar
ENR	Siemens Energy AG Stock Quote	NDC	Nationally Determined Contribution	Vs	Versus
EPS	Earnings per Share	NGO	Non-governmental organization	WACC	Weighted average cost of capital
EU	The European Union	NOPAT	Net Operating Profit After Tax	X	Times

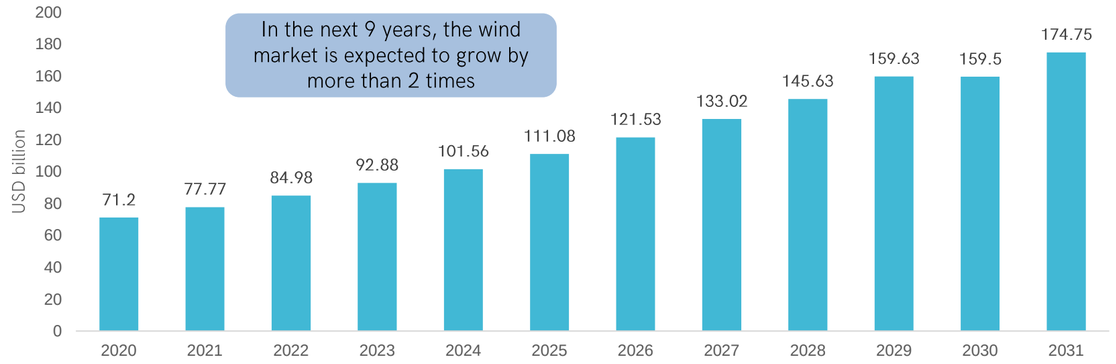
Introduction

Setting the scene

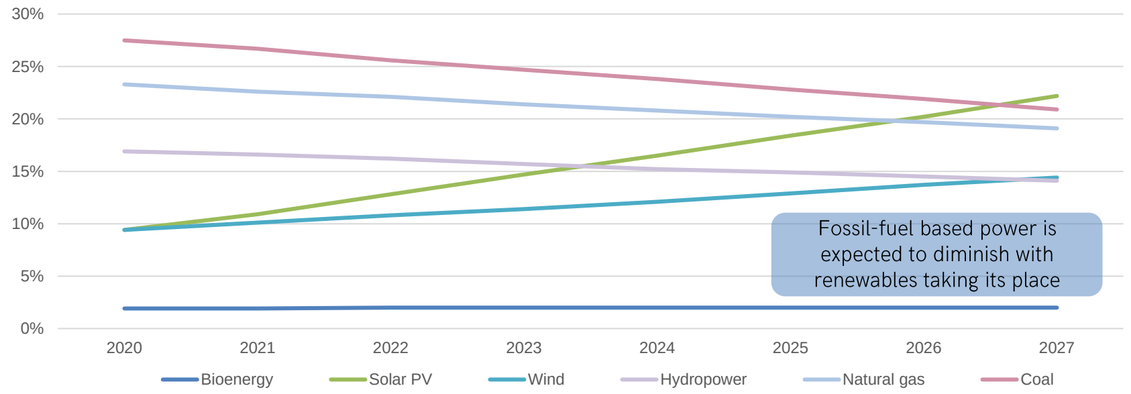
In Short

The World Economic Forum 2023 in Davos, Switzerland emphasized the importance **clean technologies**, **renewable energy** and **industry decarbonization** has for the world's current economy. Global leaders from both public and private sectors agreed on renewable energy being the solution to numerous issues. With the wind industry outlook looking promising, it might seem like a good idea to invest into it:

Wind energy market size



Share of cumulative power capacity by technology, 2020-2027



With this in mind, Siemens AG decided to increase its efforts in renewable energy industry with **possibly** Vestas by its side:

SIEMENS

A multinational conglomerate previously involved with the energy industry with a current focus on digital transformation in industry, infrastructure, mobility, and healthcare sectors.

311,000 employees

72bn EUR revenue (FY22)

4.4bn EUR net income (FY22)

Vestas

A global original wind turbine equipment manufacturer offering onshore and offshore wind farm solutions together with related services and project development offerings.

28,000 employees

14.5bn EUR revenue (FY22)

-1.5bn EUR net loss (FY22)

Therefore, this report aims to discover whether Siemens and Vestas is a good match in terms of:

Strategic fit
Financial fit
Synergies
Feasibility

Sources: (IEA, 2022); (Siemens, 2023a); (Vestas, 2023a); (Vujasin, 2023); (Precedence Research, no date)

Executive Summary

Overview of the report's main findings

In Short

The Global Energy Market

Currently, the energy industry is still dominated by fossil fuel-based power, although solar and wind energy is expected to grow intensely in the following decade.

The wind energy market is highly supported by legislation, new policies, and the public, thus looks like a promising investment target:

Market size value, 2021	Largest revenue generation
USD 77.7 billion	Asia-Pacific region
Revenue forecast, 2030	**Growth rate, 2022-2031**
USD 174.75 billion	CAGR of 9.4%

Financial Findings

Two different strategies for Vestas' acquisition were assessed and none of them provided enough synergies to justify a deal.

Vestas' value depends on three key deployments, 1) future demand for wind turbines, 2) change of service revenue mix and 3) different risk sharing with customers. Siemens cannot better control these factors.

Siemens and Vestas Strategic Fit

Acquisition of Vestas does not support Siemens' current strategy to divest from the low-margin energy business.

Vestas – an operations-based company does not align with current Siemens focus on service provision.

Conclusions

Siemens is advised **AGAINST** acquiring Vestas due to:

Regulatory concerns: post-acquisition market share indicates high concentration and is likely to be halted;

Limited synergies: the two companies do not complement each other in many spheres significantly;

Financial concerns: The acquisition does not provide enough synergies or improve the equity story for Siemens.

Alternative Solutions

1. Following current Siemens Energy performance and Siemens' stake in it, it is advised to increase the ownership or acquire Siemens Energy back to better control the financial and operational side of the company. This acquisition is not expected to raise regulatory issues.
2. To fulfil Siemens' strategy to expand its digitalization and automation services, the company is advised to invest in companies better complementing its business lines. Possible targets include Targo for Mobility line, Landis+Gyr for Smart Infrastructure line, and Illumina for Healthineers line. A deeper analysis is recommended.

Source: (Precedence Research, no date)

INDUSTRY ANALYSIS

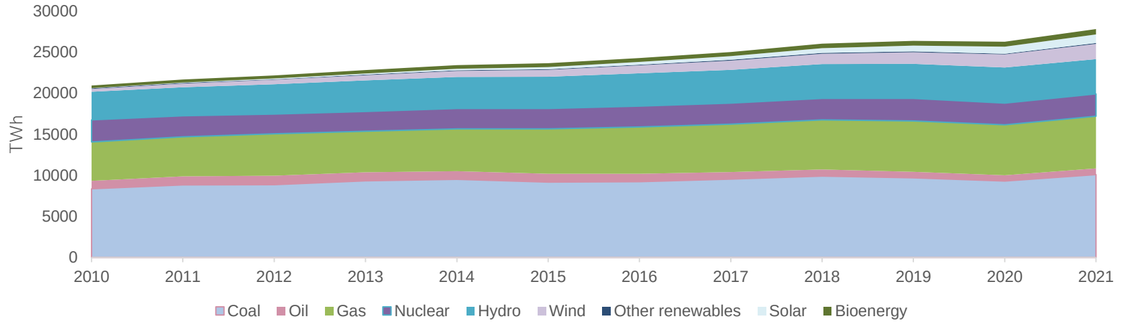
Global Energy Market

General overview of the industry valued at 881.7bn USD in 2021

Industry Analysis

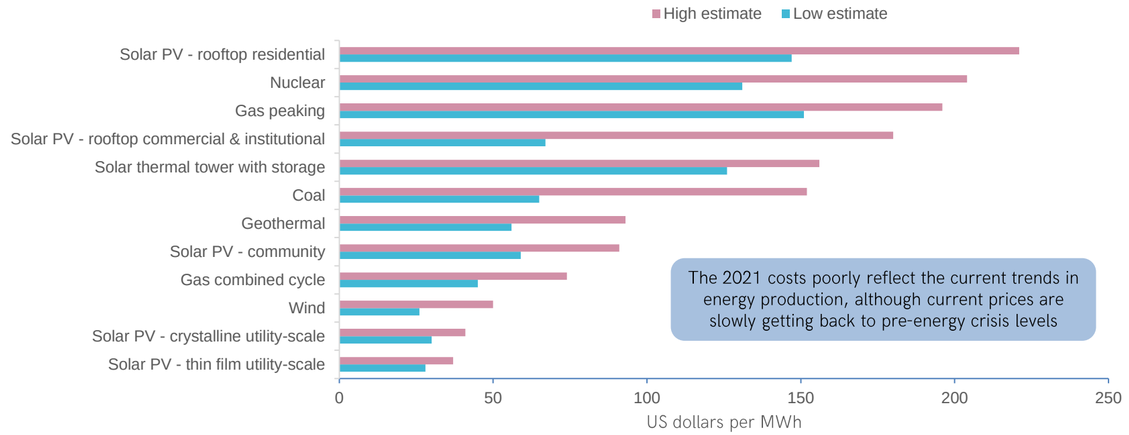
Although renewable energy production increases yearly, fossil fuels remain the main sources of energy…

Electricity production by source, World



…nevertheless, wind and solar energy cost the least in 2021

Levelized cost of energy in the U.S. 2021, by source



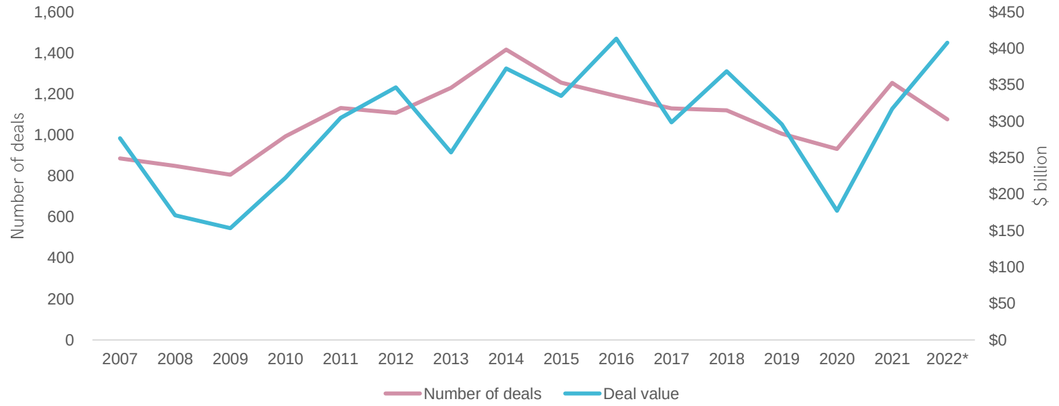
The 2021 costs poorly reflect the current trends in energy production, although current prices are slowly getting back to pre-energy crisis levels

Global levelized cost of energy by technology 2021

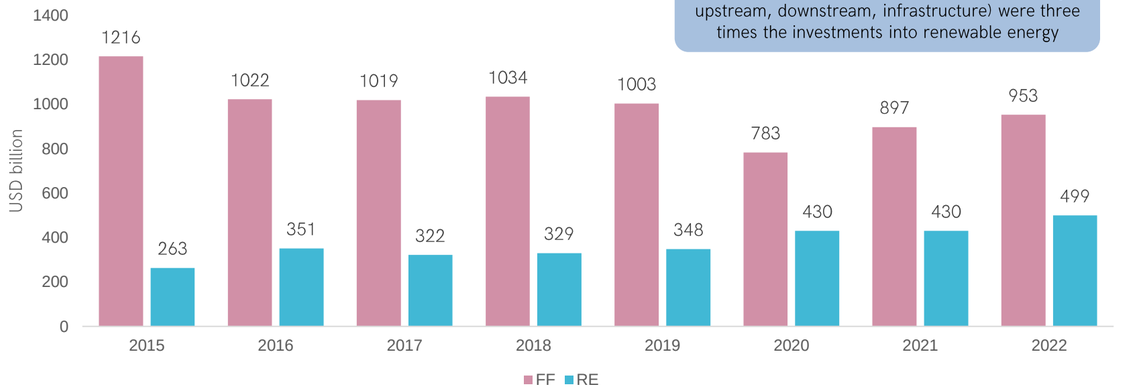
Coal	Gas	Wind	Solar
$108 MWh	$60 MWh	$38 MWh	$36 MWh

Even though the energy market experienced a crisis in 2022 – increases in prices of 60% for oil and 400% for natural gas, the deal value of energy M&As grew by 29%

Global M&A deal count and value in the energy sector



Annual investment in renewable energy vs. fossil fuels



Annual fossil fuel capital investment (including upstream, downstream, infrastructure) were three times the investments into renewable energy

Following numerous policies, private and public institutions have condemned fossil fuels, but investments into oil and gas fields have started to grow again. Current financing of fossil fuel development is already above the limit of meeting the 1.5°C target

Sources: (Aizarani, 2022c; 2023a); (Spherical Insights LLP, 2022); (IRENA and CPI, 2023); (PitchBook, 2023); (Our World in Data, no date a)

Global Energy Market

Industry Analysis

Current policies and regulations shape a carbon-free future

The renewable energy industry receives a lot of regulatory support, although more efforts are needed to meet the targets set out by international organizations.

The most important changes in the field in 2021-2023 were:

In March 2023, the EU announced plans to offer subsidies for member countries targeted at several green industries – solar panels, batteries, wind turbines, electrolyzers and heat pumps. Projects will be eligible to 350 and 150 EUR million subsidies in poorer and wealthier regions, respectively.

In 2022, following fierce competition from Chinese wind turbine imports and losses incurred by the European manufacturers, Siemens Gamesa proposed introducing a quota on EU-produced turbines amount in the region.

China, in its 14th Five-Year Plan (2022), set out a target of 33% of the country's electricity generation to come from renewable energy by 2025.

The US Inflation Reduction Act (2022) expanded support for renewable energy offering tax credits and other measures for the next 10 years.

REPowerEU in 2022 increased the renewable energy target set by the EU Commission from 40% in 2021 to 45% to be reached by 2030. Many EU countries have been vigorously expanding their support for renewable energy responding to the Russia-Ukraine war.

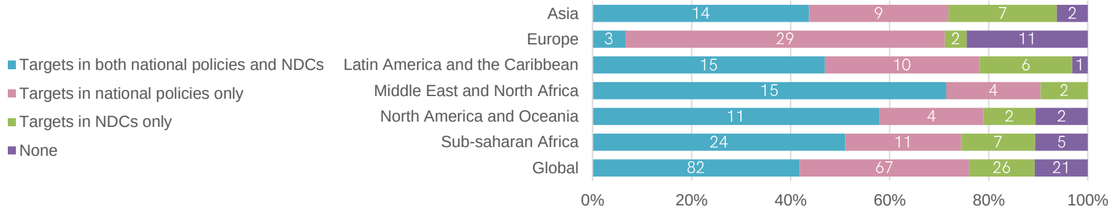
In COP26 (2021), India set out to generate 50% of its electricity from renewables by 2030, also reach net zero emissions by 2070.

In addition, with offshore wind technologies developing, and its costs decreasing, governments around the world announced new targets for it:

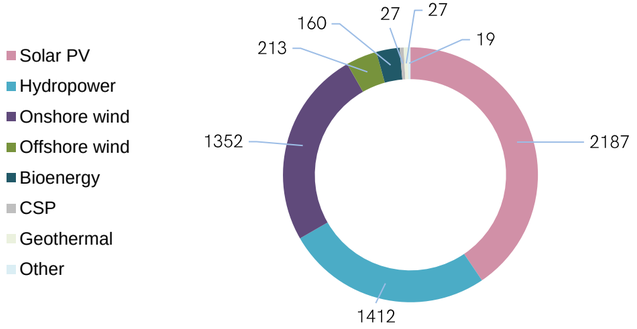
U.S.A	Germany + UK	Belgium + Denmark + Germany + Netherlands
30 GW by 2030	80 GW by 2030	150 GW by 2050

To combat climate change, many governments and institutions around the world have published numerous targets in which renewable energy plays a vital role, but not all. Although progress is visible:

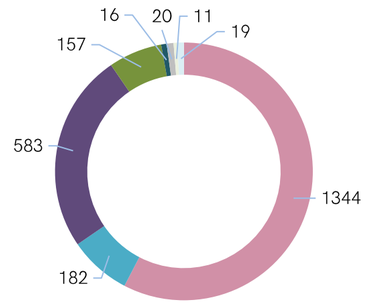
Number of countries with renewable power targets in NDCs and national energy plans



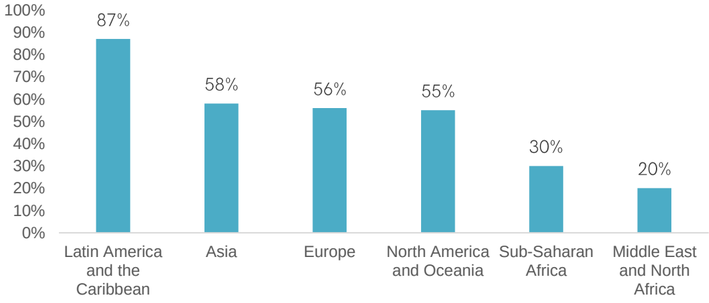
Total targeted capacity, GW



Remaining targeted capacity, GW (2022-2030)



Progress made on aggregated targets for 2030, by region, as of 2021



57% of the world's targets by 2030 have been already achieved

Not all of the global target capacity for 2020 has been met – 88%

Sources: (Bojek, 2022a); (IRENA, 2022a; 2022b; 2022c; 2022d); (Tani, 2022); (Espinoza and Fleming, 2023)

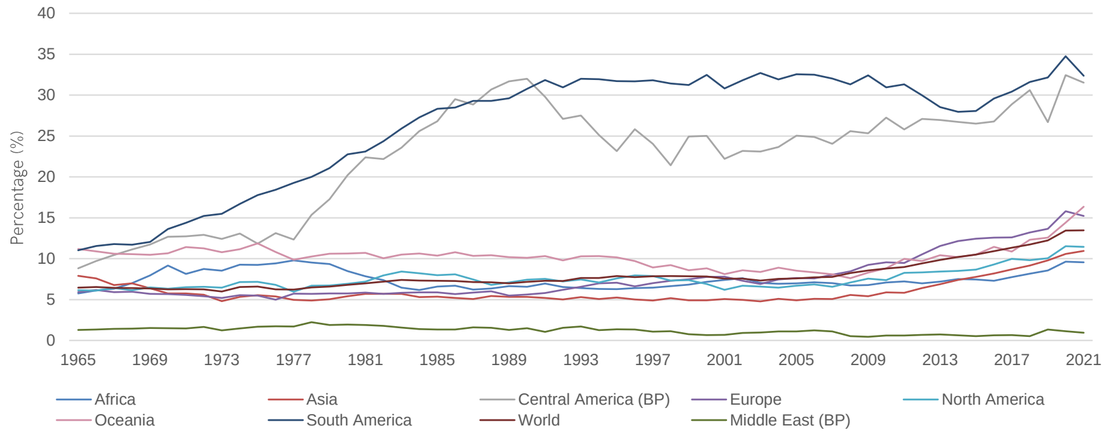
Global Renewable Energy Market

Industry Analysis

Energy generation trends show growth in renewables with solar and wind leading

With the support of global institutions and local governments, the renewable energy industry has been growing rigorously in the past decades among different regions:

Share of primary energy from renewable sources

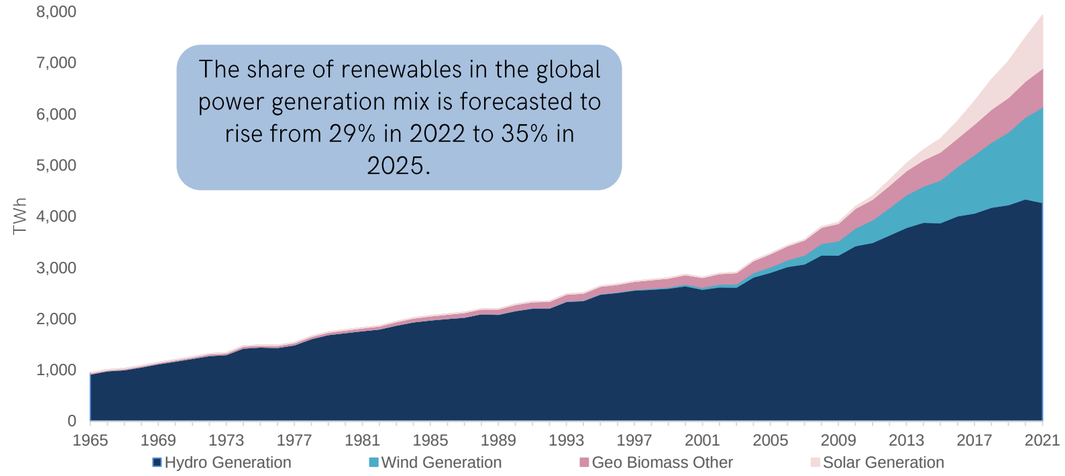


Interestingly, South America generates 25% of their energy from renewables, mainly due to its well-established hydropower plants (80% of all renewable energy). Slight increases can be observed in other regions' energy usage due to recently growing political and environmental actions against fuel-based energy, and technological advancements.

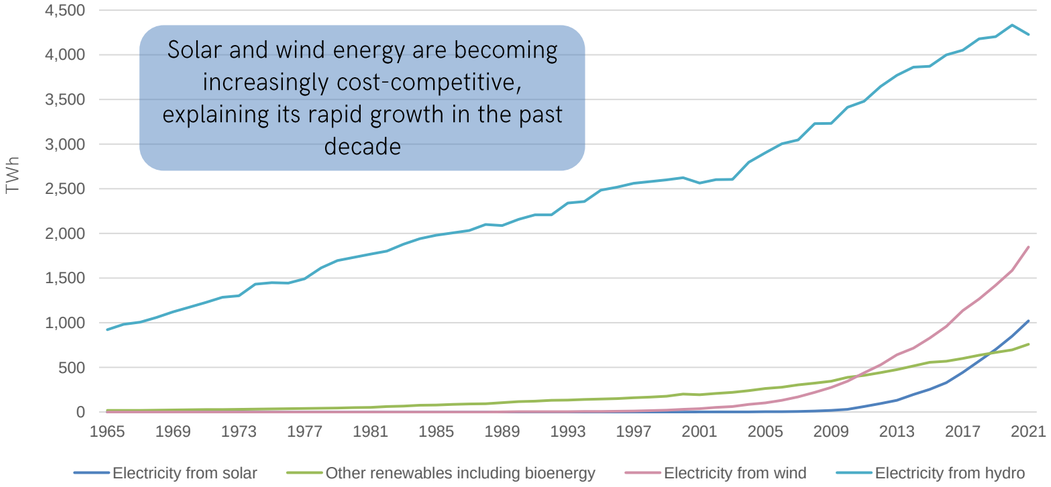
	Solar	Wind	Hydro	Other
TWh in 2010	31.05	345.99	3411.93	390.26
TWh in 2021	1021.22	1848.26	4226.34	759.80
Change, TWh	990.17	1502.27	814.41	369.54
Change, %	3289%	534%	124%	195%

The most notable changes can be noticed in solar and wind energy generation, suggesting further extensions in the industry.

Renewable energy generation, World



Modern renewable energy generation by source, World



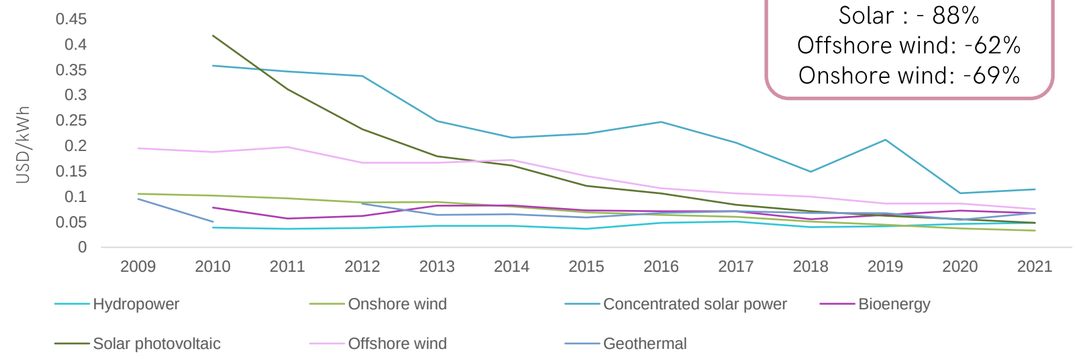
Sources: (Cortiñas and Schechter, 2022); (Our World in Data, 2022a; 2022b; 2022c); (IEA, 2023)

Global Renewable Energy Market

Industry Analysis

Price trends and future outlook: forecasted demand growth with slumps in prices

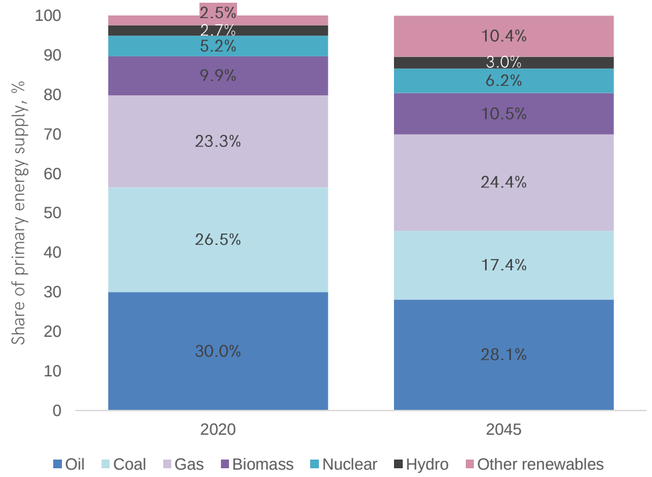
Levelized Cost of Energy, World



Cost Reduction
Solar : - 88%
Offshore wind: -62%
Onshore wind: -69%

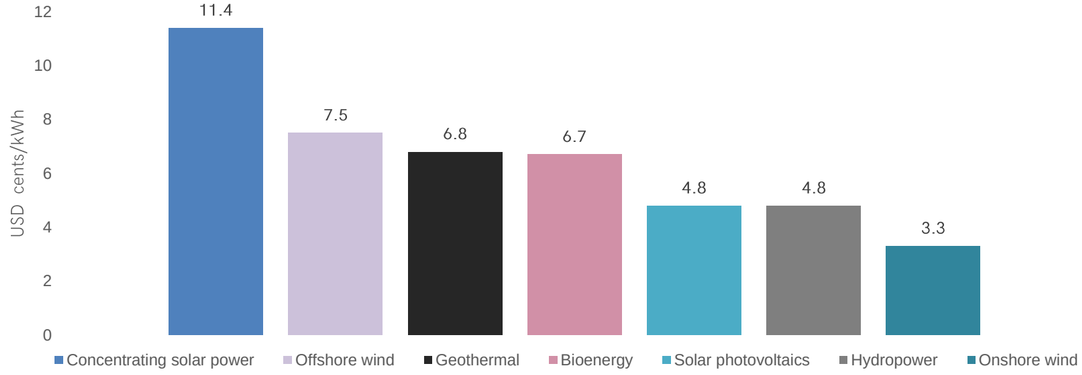
Onshore wind, Hydropower and Solar PV provided lowest costs of energy and lowest generation prices in 2021, which are forecasted to decrease even further by 2030.

Global primary energy demand by fuel type 2020-2045

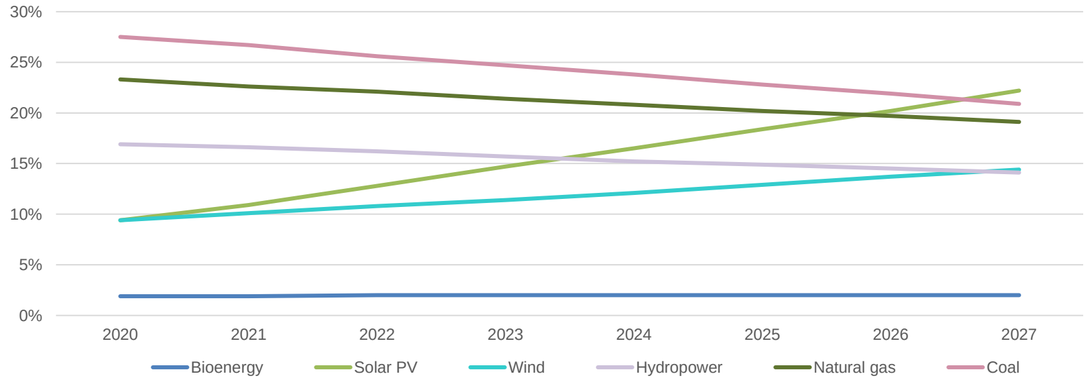


Investors are taking measures and providing a commitment to fossil fuel divestment, as well as ESG investment criteria speaks against coal and gas generation - opportunities for intense renewable energy industry growth in the upcoming decades.

Global renewable electricity generation price 2021, by source



Share of cumulative power capacity by technology, 2020-2027



Global renewable energy cost reduction 2018-2030, by source

Onshore wind: - 25%
Offshore wind: -55%

Concentrating solar power: -35%
Solar photovoltaic: -58%

Forecasts show that demand for and generation of fossil-fuel-based energy will decrease dramatically, with renewables taking its place. With a growing demand and capacity of renewable energy, its prices are expected to fall significantly, too.

Sources: (IEA, 2022); (Aizarani, 2023b); (Fernández, 2023a; 2023b); (Global Wind Energy Council, no date a); (Our World in Data, no date b)

Global Wind Energy Market

Industry Analysis

Diving deeper into wind: market status of the 837 GW installed capacity industry

10 largest wind turbine manufacturers in the world, 2022

1. **Vestas**
   - Location: Aarhus, Denmark
   - Installed capacity: 164 GW
2. **Siemens Gamesa**
   - Location: Biscay, Spain
   - Installed capacity: 127.5 GW
3. **Goldwind**
   - Location: Beijing, China
   - Installed capacity: 92 GW
4. **GE**
   - Location: Boston, U.S.
   - Installed capacity: 62 GW
5. **Envision**
   - Location: Shanghai, China
   - Installed capacity: 40 GW
6. **Nordex**
   - Location: Hamburg, Germany
   - Installed capacity: 29 GW
7. **MingYang**
   - Location: Zhongshan, China
   - Installed capacity: 15 GW
8. **Shanghai Electric**
   - Location: Shanghai, China
   - Installed capacity: 11 GW
9. **CSIC**
   - Location: Chongqin, China
   - Installed capacity: 9 GW
10. **Windey**
    - Location: Zhejiang, China
    - Installed capacity: 6 GW

Market size value, 2021	Revenue forecast, 2030	Growth rate, 2022-2031	Largest revenue generation
USD 77.7 billion	USD 174.75 billion	CAGR of 9.4%	Asia-Pacific region
Most opportunistic segment	**Dominating application**	**Opportunistic application**	**Growth drivers**
North America	Utility segment	Commercial & residential	Legislation, infrastructure

Largest Wind Farm Companies

Company	Revenue, USD
Ørsted	51.45 billion
Iberdrola	36.90 billion
JinkoSolar Holding Co. Ltd.	33.95 billion
Vestas Wind Systems A/S	15.2 billion
Siemens Gamesa	9.48 billion

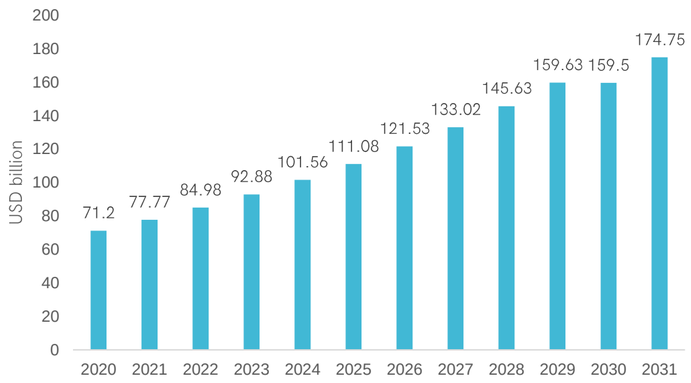
Largest Wind Power Companies

Company	Revenue, USD
General Electric	74.19 billion
Siemens	70 billion
Florida Power and Light	14 billion
Vestas Wind Systems A/S	15.2 billion
Invenergy	928 Million

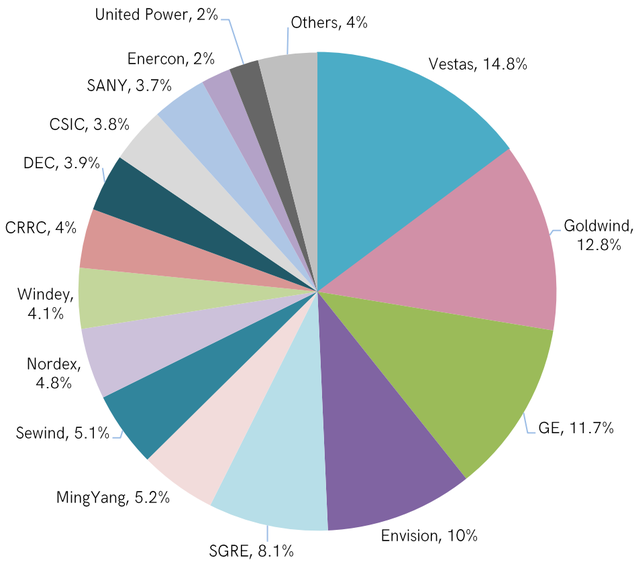
Wind energy's end-users for the most part are industrial, then commercial, followed by residential.

Based on type, wind energy market's segments fall into onshore and offshore.

Wind energy market size



Global top 15 wind turbine OEMs: market share 2020



Sources: (Ayushi and Eswara, 2021); (Wood Mackenzie, 2021); (BizVibe, 2022); (China Wind, no date); (Envision, no date); (Gamesa Electric, no date); (GE, no date a); (Goldwind, no date a); (MingYang Smart Energy, no date); (Nordex SE, no date); (Precedence Research, no date); (Shanghai Electric, no date); (Vestas, no date c; no date e)

Global Wind Energy Market

Industry Analysis

Product offers* of the main market players with Vestas in the lead

Vestas

Offshore Wind Turbines

V236-15.0 MW™
Swept area: 43,742 m2
Rated power: 15,000kW
Rotor diameter: 236 m

V174-9.5 MW™
Swept area: 23.779 m2
Rated power: 9,500kW/9,600kW
Rotor diameter: 174 m

V164-10.0 MW™
Swept area: 21,124 m2
Rated power: 10,000 kW
Rotor diameter: 164 m

V164-9.5 MW™
Swept area: 21,124 m2
Rated power: 9,500 kW
Rotor diameter: 164 m

EnVentus™ Platform

V172-7.2 MW™
Swept area: 23,235 m2
Rated power: 7,200 kW
Rotor diameter: 172 m

V162-7.2 MW™
Swept area: 20,612 m2
Rated power: 6,800 kW
Rotor diameter: 162 m

4 MW Platform

V163-4.5 MW™
Swept area: 20,867 m2
Rated power: 4,500 kW
Rotor diameter: 163 m

V155-3.6 MW™
Swept area: 18,869 m2
Rated power: 3,600 kW
Rotor diameter: 155 m

2 MW Platform

V120-2.2 MW™ IEC IIB/IEC S
V110-2.0 MW IEC IIIA
V110-2.0 MW IEC IIB
V90-2.0 MW

Siemens Gamesa Renewable Energy

Onshore Wind Turbines

SG 7.0-170
Swept area: 22,697 m2
Rated power: 7,000 kW
Rotor diameter: 170 m

SG 7.0-170
Swept area: 22,697 m2
Rated power: 7,000 kW
Rotor diameter: 170 m

SG 3.4-145
Swept area: 16,513 m2
Rated power: 3,465 kW
Rotor diameter: 145 m

Offshore Wind Turbines

SG 8.0-167 DD
Swept area: 21,900 m2
Rated power: 8,000 kW
Rotor diameter: 167 m

SG 11.0-200 DD
Swept area: 31,400 m2
Rated power: 11,000 kW
Rotor diameter: 200 m

SG 14-222 DD
Swept area: 39,000 m2
Rated power: 14,000 kW
Rotor diameter: 222 m

Goldwind

GW 1S
Swept area: 5,281 m2
Rated power: 1,100 kW
Rotor diameter: 82 m

GW 2S
Swept area: 17,671 m2
Rated power: 3,000 kW
Rotor diameter: 150 m

GW 3S
Swept area: 21,124 m2
Rated power: 4,000 kW
Rotor diameter: 165 m

GW 4S
Swept area: 14,526 m2
Rated power: 4,200 kW
Rotor diameter: 136 m

GW 5S
Swept area: 21,382 m2
Rated power: 5,600 kW
Rotor diameter: 165 m

GW 6S/8S
Rated power: 6,450/8,000 kW
Rotor diameter: 184/175 m

GE Renewable Energy

Onshore Wind Turbines

Sierra
Rated power: 3,200 kW

Cypress GE-164
Rated power: 6,300 kW
Rotor diameter: 164 m

2 MW
Rated power: 2,800 kW
Rotor diameter: 132 m

3 MW
Rated power: 4,000 kW
Rotor diameter: 137 m

Offshore Wind Turbines

Haliade-X
Rated power: 13,600 kW
Rotor diameter: 220 m

Haliade 150-6MW
Rated power: 6,000 kW
Rotor diameter: 150 m

Envision

Envision EN110-2,1
Swept area: 9,503 m2
Rated power: 2,100 kW
Rotor diameter: 110 m

Envision EN161-5.2
Swept area: 20,358 m2
Rated power: 5,200 kW
Rotor diameter: 161 m

Envision EN120-3.0
Swept area: 11,310 m2
Rated power: 3,000 kW
Rotor diameter: 120 m

Envision EN200-7.0
Swept area: 31,415 m2
Rated power: 7,000 kW
Rotor diameter: 200 m

Envision EN148-4.5
Swept area: 17,087 m2
Rated power: 4,500 kW
Rotor diameter: 148 m

Envision EN190-8.0
Swept area: 28,353m2
Rated power: 8,000 kW
Rotor diameter: 190 m

Sources: (GE, no date C); (Goldwind, no date b); (Siemens Gamesa, no date b); (Vestas, no date f); (Wind Turbine Models, no date)

*Not all products manufactured by each company were included, only the main ones

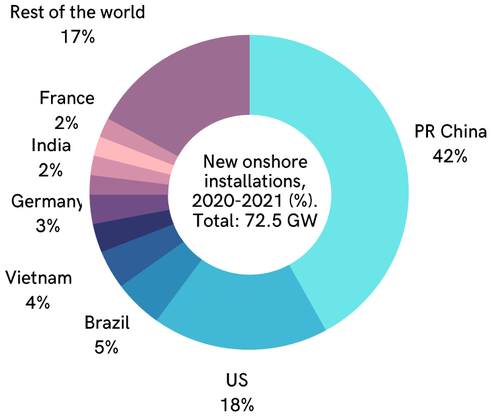
Global Wind Energy Market

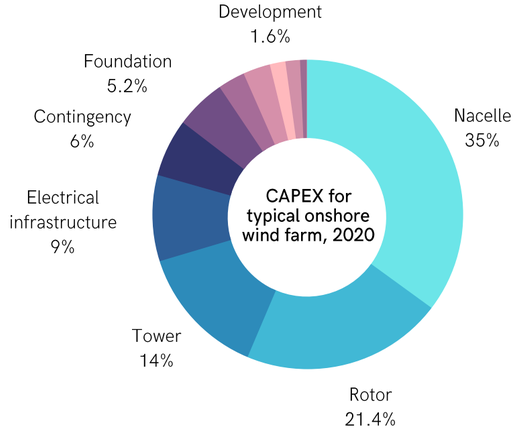
Industry Analysis

Off-shore, on-shore trends, country leaders, project prices

Onshore wind energy - energy generated by wind turbines located on the land.

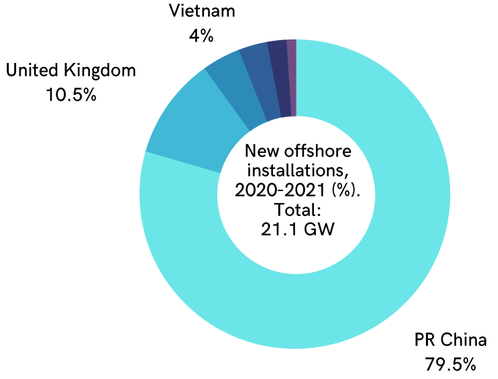
\+ Cost effective | Quick installation | Easy maintenance | No wind - no power | Less energy | Inconsistent power −

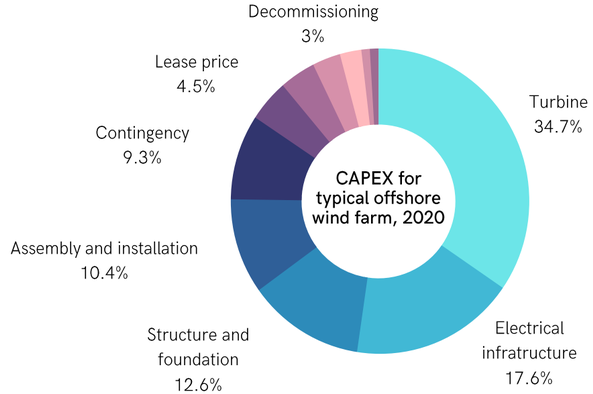




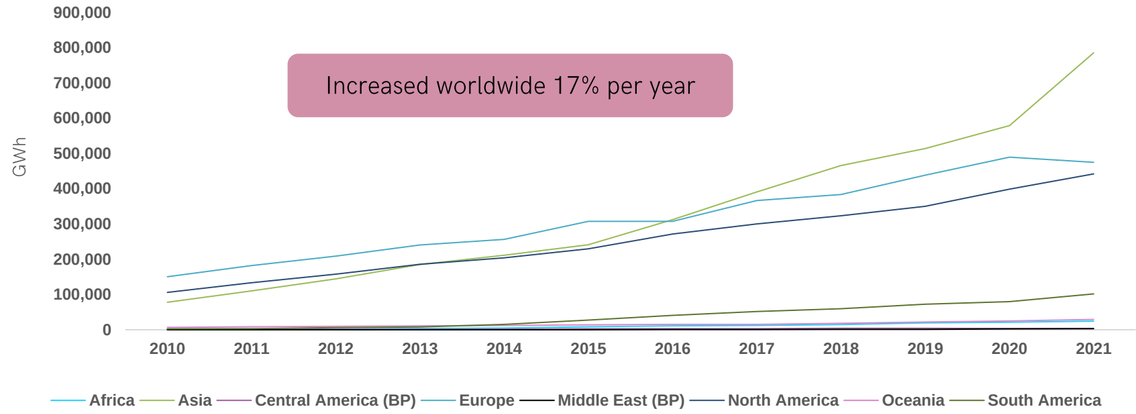
Off-shore wind energy - energy generated by wind turbines located in the sea/ocean.

\+ More efficient | More space | Less impact on nature | Hard to maintain | Higher costs | High investments −



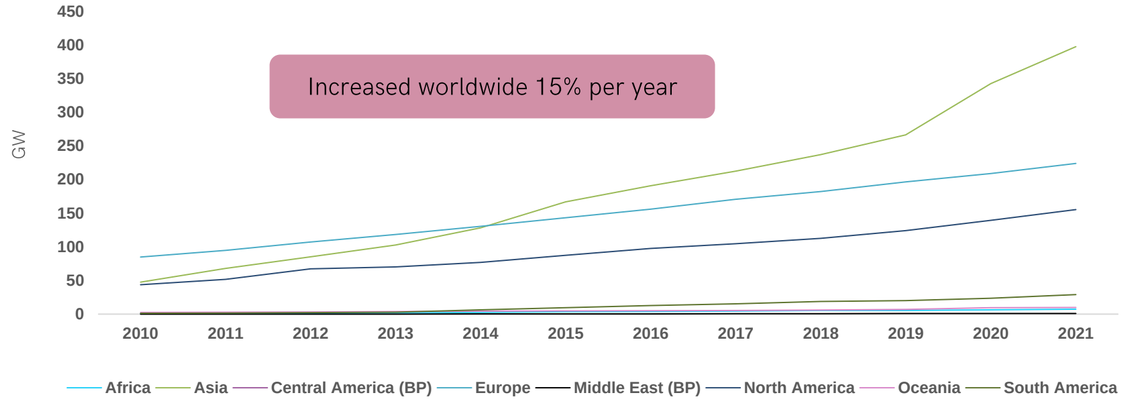


Wind energy generation, offshore and onshore



Wind energy capacity, offshore and onshore

Yearly wind energy generation is significantly lower than capacity. Most turbines operate at 35-65% capacity



Typical UK offshore project
CAPEX = £2,370,000/MW
AVG OPEX/year = £76,000/MW
Lifetime = 27 years
WACC = 6.0%
AVG energy production = 4,471MWh/year/MW

Typical onshore project
CAPEX = 1,300,000 USD/MW
AVG OPEX/year = 45,000 USD/MW
Lifetime = 25 years
WACC = 6.0-11.0%
AVG energy production = 2.5-3MWh/year/MW

Source: (Brückmann, 2016); (Wind Europe, 2020); (Weather Guard Lightning Tech, 2021); (BVG Associates, no date); (Global Wind Energy Council, no date b; no date c; no date d; no date e); (National Grid, no date); (Our World in Data, no date c)

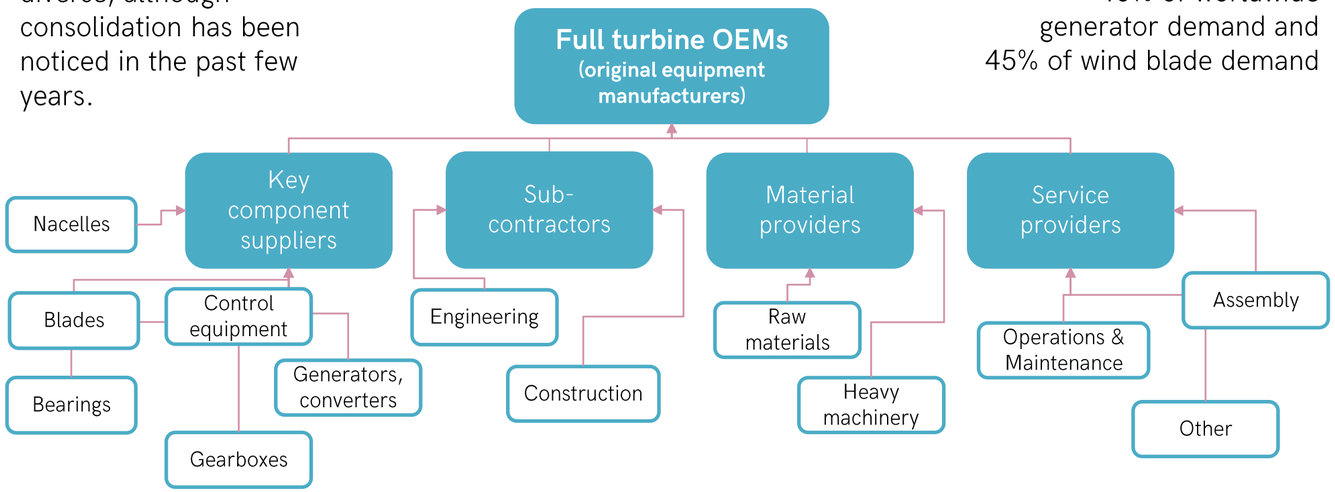
Global Wind Energy Market

Industry Analysis

Supply chain, materials, and technology

The global supply chain of wind turbines is largely diverse, although consolidation has been noticed in the past few years.

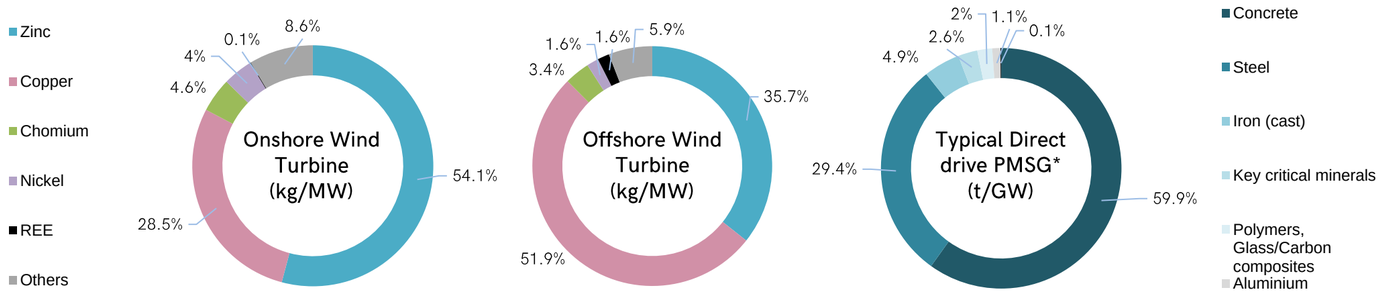
Typical simplified wind turbine supply chain



15 OEM's in-house production is able to fulfil 40% of worldwide generator demand and 45% of wind blade demand

The manufacturing of a wind turbine requires quite a number of raw materials that are dependent on certain geographies. For example, main countries supplying critical minerals are China, the US, Myanmar, Indonesia, the Philippines, Chile and Peru, which poses some logistical, security and supply chain transparency threats.

Material breakdown of onshore and offshore wind turbines



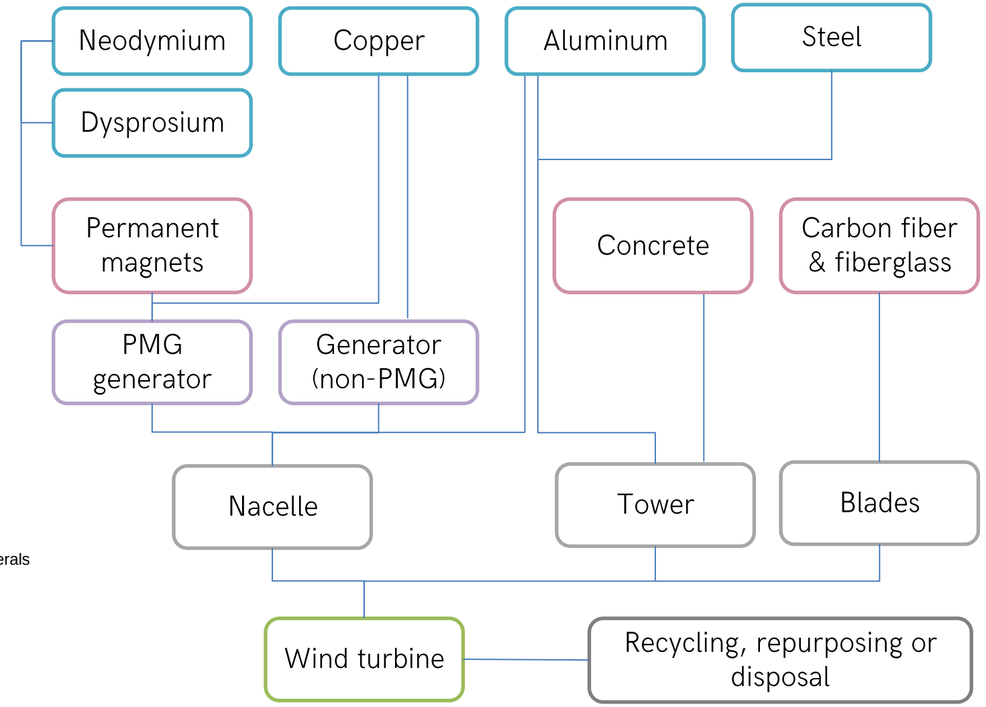
Source: (Global Wind Energy Council, no date a)

*PMSG = Permanent Magnet Synchronous Generator

Exploitation models common for the legacy energy sector are visible in the wind industry's upstream chain. This must be eliminated in the value chain by:

- Escalating ESG compliance
- Raising public awareness
- Creating public campaigns for socio-environmental responsibility

A simplified materials breakdown of the wind value chain



Global Wind Energy Market

Industry Analysis

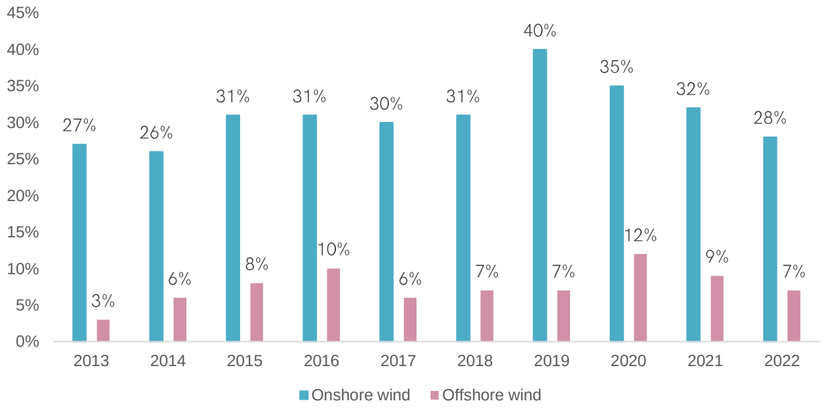
Financing trends show high dependency on private investments

Investments into energy transition – renewable energy, its efficiency, e-transport, e-heat, storage, hydrogen, and CCS – amounted to 1.3 trillion USD in 2022 globally.

The East Asia and Pacific region is the leader in renewable energy investment attraction – 2/3 of global investments in 2022 (mainly China).

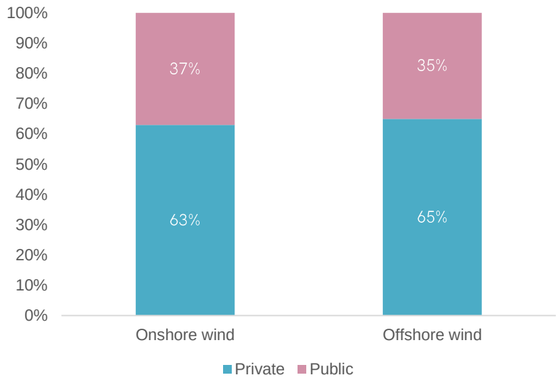
In 2022, wind technologies attracted 174bn USD (42% of all) investments (141bn USD and 34bn USD for onshore and offshore respectively)

Share of annual investments into wind technology, 2013-2022



Wind technology costs experienced some upsurges in 2021 and 2022, explaining the decrease in its shares, although investments themselves increased by 4% since 2019.

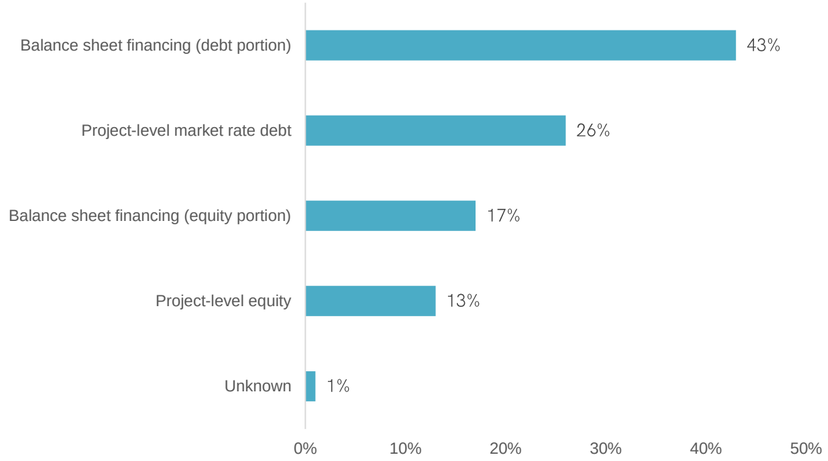
Share of public/private investments into wind technology, 2020



Even though wind technologies are mainly financed by private entities, lots of investments come from the public – largely due to China's massive role in the industry where state-owned institutions lead the way.

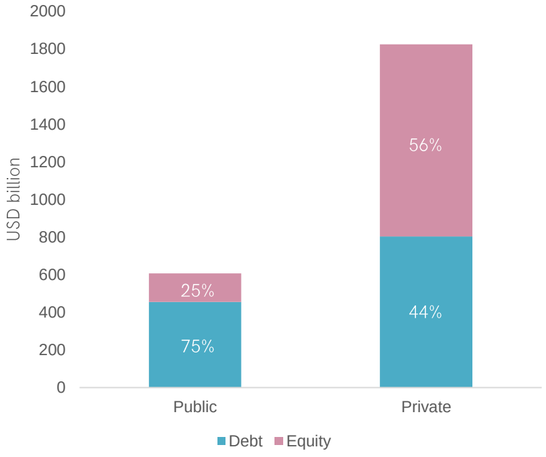
Balance sheet has become a popular financing structure due to the matureness of the renewable energy sector. This instrument allows companies to transfer gains to shareholders as it uses retained earnings to self-finance its assets.

Onshore wind investments by instrument, 2019/2020 average



Equity's share is rather small due to state-owned financial institutions playing a larger role in wind projects – debt lending is their preferred option.

Debt and equity investment by type of investor, 2013-2020



The private sector accounts for 75% of all global investments in the 2013-2020 period. The largest investors are corporations with an average investment share of 59.25%.

Source: (IRENA and CPI, 2023b)

Global Wind Energy Market

Industry Analysis

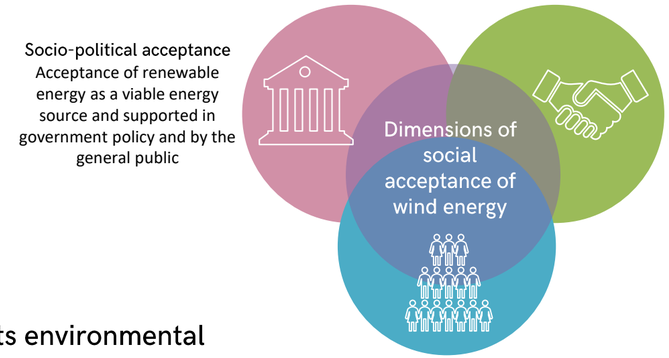
Wind - the most ESG compliant industry? Analysis shows improvements are needed

Wind energy is considered to be one of the cleanest energy sources – it emits **4 tones** of CO2-equivalents per GWh of electricity over the power plant's lifecycle, and is surpassed by nuclear energy only (3 tones). Coal and oil emit **205** and **180 times** more, respectively, than wind.

Even though the wind industry presents numerous benefits, it provides some environmental and social concerns, too.

The "S" part of ESG is hard to measure, but more criteria are being outlined that must be taken into account by wind project developers. The social environment is yet reluctant to accept wind energy projects.

Even though the general public supports the transition into renewables, wind projects receive lots of resistance locally due to changes in the landscape and its large footprint.



Nonetheless, the main advantage of wind energy is energy independence, which allows for resource security and the removal of dependency on foreign energy imports.

As for the "E" part, the wind industry is bearing great responsibility for its environmental impact. The industry must now move to be sustainable, therefore, addressing numerous concerns:

Renewable energy projects are thought to be contributing to reducing greenhouse gases and carbon emissions, although wind projects mainly through their supply chains might contribute to some – metals and fossil fuels used in manufacturing.

Wind farms are known to damage land and biodiversity (birds are prone to collide with blades, too). Also, pollution released during construction might include environmental concerns.

Nonetheless, wind industry, compared to others, provides strong advantages:

Wind turbines themselves do not release pollutants and do not use water for cooling

The wind industry is expected to contribute only 10% to total thermoset composite waste in 2025 and is known to produce less than other industries

Most parts of the wind turbine can be reused or recycled

Besides having environmental and social benefits, wind industry provides economic benefits, too.

Major social and economic benefits from power grid investment in Europe

Sustainability
EUR17-22bn annual CO2 savings
EUR40-140bn annual savings in health
58,000 premature deaths avoided
460 Mtoe less of final energy consumption by 2030, achieving 32.5% of the efficiency target

Competitiveness
Territorial cohesion and promotion of local economies
EUR28-37bn average electricity cost reduction (thanks to 50-65% lower RES than fossil generation cost)
+EUR175bn annual savings in fuel imports

Economy
EUR30-35bn of annual revenues for EU companies (e.g. manufacturers & service providers) 440-620k quality jobs per year related to DSO grids
EUR30-35bn annual sales in equipment (~90% of total investment

Customer empowerment
~40GW self-consumption capacity added
50-70m EVs with smart charging
New services: storage, electric heating, smart appliances, aggregators

Sources: (Ritchie, 2020); (DBRS Morningstar, 2021); (Global Wind Energy Council, no date a); *(Influence of wind power technology on social sustainability,* no date); (Wind Europe, no date)

Global Wind Energy Market

Industry Analysis

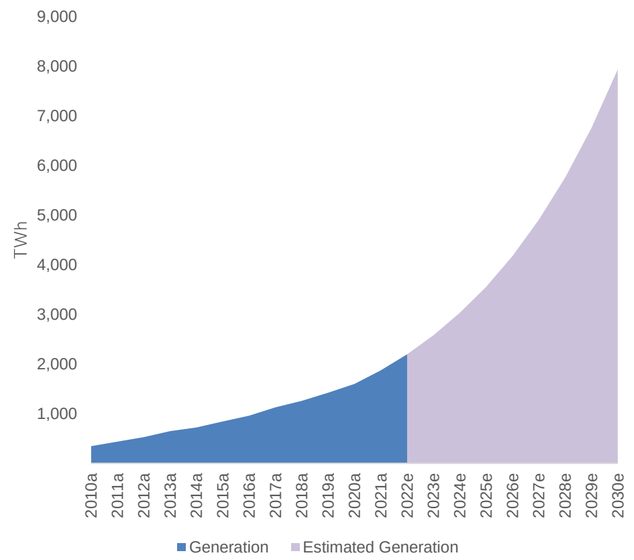
Red tape and community opposition – how to combat the main challenges?

Wind industry is facing many challenges, the main ones being:

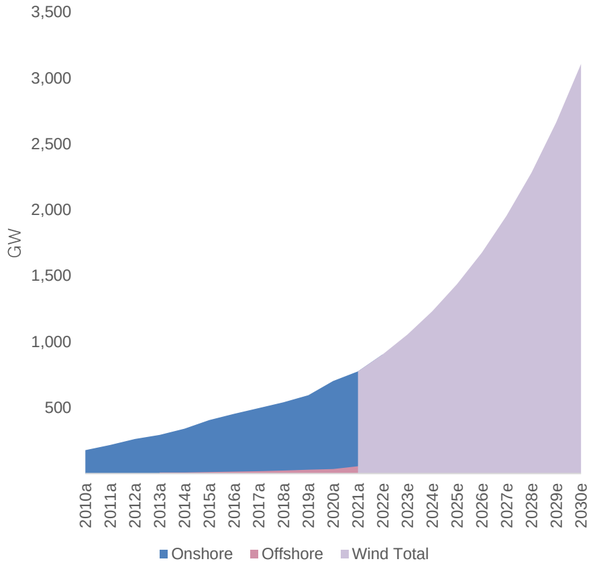
- Lengthy and complicated processes to obtain permits
- Growing competition between manufacturers pressures sales margins
- Commodity prices increased significantly in 2021 and 2022
- Increased competition for procurement of materials poses disruptions and delays in manufacturing
- Community opposition and red tape slow down new onshore wind farm projects
- Governments around the world restrict space for building wind farms
- Multiple shareholder models complicate land acquisition
- Tightening of monetary policies around the world slack industry growth

Even though the current growth of the industry is unprecedented, it is not enough to meet the Net Zero Scenario, posing another challenge to the wind industry – how to increase growth?

Wind power generation in the Net Zero Scenario, 2010-2030



Wind power capacity in the Net Zero Scenario, 2010-2030



To combat above mentioned challenges, multiple measures should be considered:

- Introducing mandates for maximum lead times
- Introducing regulatory fast track to simplify the permitting process
- Introducing digitized, user-friendly and up-to-date databases for energy projects-related records
- Introducing dedicated authorities to help with the permittance and other processes
- Dedicating more staff to the existing authorities working with wind projects
- Introducing guidance for transparent land and ocean usage
- Facilitating ongoing dialogue between the communities and the industry
- Encouraging community benefit schemes
- Minimizing disinformation present about the wind energy
- Introducing a clearing house mechanism for legal disputes

Sources: (Bojek, 2022b); (IRENA, 2022e); (IRENA and CPI, 2023b); (Global Wind Energy Council, no date a)

Global Wind Energy Market

BONUS slide

Largest world's wind farms show high presence of Siemens, GE and Vestas

Wind farm	Developer/ Manufacturer	Location	Capacity	Number of turbines	Project's worth
Gansu Wind Farm (onshore)	Gansu Longyuan Wind Power		20 GW (planned)	7,000 (planned)	USD 17.5 billion
Alta Wind Energy Centre (onshore)	Terra-Gen Power and Global Infrastructure Partners		1,550 MW	600	USD 2.875 billion
Muppandal Wind Farm (onshore)	Enercon, NEG Micon, Suzlon, **Vestas**		1,500 MW	3,000	n/a
Hornsea One (offshore)	Ørsted, GIP / **Siemens**		1.2 GW	174	USD 5 billion
Jaisalmer Wind Park (onshore)	Suzlon		1.064 MW	n/a	n/a
Shepherds Flat Wind Farm (onshore)	Caithness Energy / **GE**		845 MW	338	USD 2 billion
Roscoe Wind Farm (onshore)	E.ON Climate and Renewables (EC&R) / Mitsubishi, **Siemens, GE**		781.5 MW	627	USD 1 billion
Horse Hollow Wind Energy Centre (onshore)	Blattner Energy / **GE, Siemens**		735.5 MW	421	n/a
Capricorn Ridge Wind Farm (onshore)	NextEra Energy Sources / **GE, Siemens**		662.5 MW	407	n/a
Walney Extension Offshore Wind Farm	Ørsted, PFA, PKA / **MHI-Vestas, Siemens Gamesa**		659 MW	87	USD 1.58 billion

Source: (NES Fircroft, 2021)

COMPANY ANALYSIS

VESTAS

Vestas

Company Analysis

General overview of one of the top wind companies in the world

Danish Wind-Turbine Manufacturer for onshore and offshore use, est. 1945, 29,000 employees, 85,335 installed wind turbines, 87 countries.

Nr. 1 wind-turbine manufacturer in the world (2022), making 17% of the new installations.

Publicly traded company only registered on the Nasdaq Copenhagen stock exchange

Market capitalization: 30.43bn USD

Key goals

- Carbon neutral by 2030
- Zero waste turbines by 2040

Key products

En Ventus
Variants maximize the potential of each wind site.
Energy neutral: after 6-7 months of operation.
Energy return: 34-42 times
Recyclability rate: 86%-89%

4MW Platform
Designed for various wind and site conditions.
Energy neutral: after 4.8-7.6 months of operation.
Energy return: 31-50 times
Recyclability rate: 83%-88.5%

2MW Platform
One of the most trusted industry platforms.
Energy neutral: after 7-9 months of operation.
Energy return: 26-35 times
Recyclability rate: 82-84%

Offshore
Available for both high and low geographies.
Active yaw control
IEC-rating
Oldest commercial wind-farm

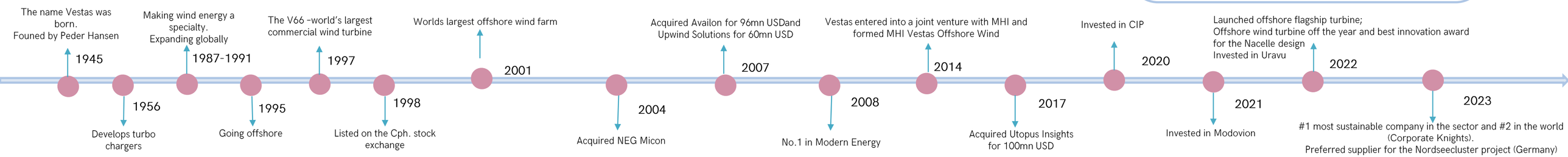
Key business areas

Development	Onshore	Offshore	Service
Projects sold (number) 2022: 4 2021: 6	Deliveries (GW) 2022: 124 2021: 14.6	Deliveries (GW) 2022: 0.9 2021: 2.0	GW under service 2022: 144 2021: 129
Order intake, generated (GW) 2022: 1.6 2021: 1.5	Order intake (GW) 2022: 10.5 2021: 13.0	Preferred Supplier Agreements (GW) 2022: 5.1 2021: 3.5	AVG backing contract duration (years) 2022: 11 2021: 10
Pipeline of projects (GW) 2022: 32.1 2021: 24.6	Order backlog (GW) 2022: 17.4 2021: 19.5	Order backlog (GW) 2022: 2.2 2021: 2.4	Value of order backlog (bn EUR) 2022: 30.4 2021: 27.8

Financial performance 2022
Revenue: 4.48bn EUR
EBIT margin before special items: 5%
Total investments: 850mn EUR

Financial outlook for 2023
Expected revenue: 14bn EUR (15.5bn including service rev.)
EBIT margin: 2-3%
Service EBIT margin: 22%

Long-term financial ambitions
Market leader in Onshore wind and Offshore wind.
Service EBIT margin to grow by 25%
Free cash flow: Positive
Revenue: Market leader
ROCE: 20% over the cycle



Sources: (Vestas, 2020; no date b; no date g; no date h; no date i; no date j); (Bath, 2022); (Bizvibe, 2022); (Blackridge, no date); (Tracxn, 2022); (Facebook Vestas, 2023); (*Offshore Wind Turbines Vestas*, no date)

Vestas

Company Analysis

Diving deeper into Vestas' offers: from wind farm's start to finish

Onshore

Wind turbine models

EnVentus Platform	4 MW Platform			2 MW Platform
V172-7.2 MW	V163-4.5 MW	V136-4.5 MW	V117-4.2 MW	V120-2.2 MW
V162-7.2 MW	V155-3.6 MW	V136-4.2 MW	V117-3.45 MW	V110-20 MW
V162-6.2 MW	V150-4.5 MW	V136-3.45 MW	V112-3.45 MW	V100-2.0 MW
V150-6.0 MW	V150-4.2 MW	V126-3.45 MW	V105-3.45 MW	V90-2.0 MW

Experience: +40 years
Global capacity: 154 GW
Countries: 87

Revenue 2022
10,398 EUR million

Growth expectations 2022-2025
CAGR 8-10%
Declining activity in 2023
Increase in 2024-25

Offshore

Wind turbine models

V236-15.0 MW | V174-9.5 MW | V164-10 MW | V164-9.5 MW | V117-4.2 MW

Experience: +25 years
Global capacity: +8 GW
Projects: 48
Achievement: 15 MW turbine

Revenue 2022
933 EUR million

Growth expectations 2022-2025
CAGR 35-40%
Expansion in Europe, USA, South Korea, Asia Pacific
Growth acceleration after 2024

Green energy R&D in 2021: 514 EUR million
2023 development: solution for 100% blade recycling

Development

Offerings

Wind project planning	Procure-ment	Construct-ion	Operation and service	Power plant optimization	Smart Data
Financing Grid Compliance	Technology R&D	Engineering Procurement Construction	Effective management Training Insurance	Monitoring	Product design and testing Micro-siting Manufacturing Maintenance

Project pipeline: 20 GW
FOI: 4.1 GW

Growth expectations 2022-2025
CAGR >10%
Outgrow the total onshore market

Services

Offerings

Maintenance Partnering	Part and Repair	Fleet Optimization
Active Output Management – Operations & Maintenance, Infrastructure, People, Intelligence	Access to a one-stop-shop for spare parts and repair solutions;	Product improvement solutions for partial and full load operations, as well as post cut out operations

Service capacity: +137 GW
Capabilities: Multibrand services
>5% AEP increase from solutions

Revenue 2022
3,155
EUR million

Growth expectations 2022-2025
CAGR 8-10%
Growth from high base
Higher need for output optimization

Sources: (Vestas, 2021; 2022; 2023b; 2023c; no date a; no date b; no date e)

Vestas

Company Analysis

Internal and external analysis shows strong leadership in the market

Global Footprint	Americas	EMEA	Asia Pacific
Order intake	4,546 MW	4,568 MW	2,074 MW
Wind turbines delivered	9 countries	22 countries	8 countries
Under service	56 GW	69 GW	19 GW
Service contracts in	22 countries	38 countries	12 countries
Revenue	5,111 EUR million	7,826 EUR million	1,549 EUR million

Western competitors' global operational presence	Americas	EMEA	Asia Pacific
Siemens Gamesa	3	6	3
GE	4	9	4
Nordex	6	18	1

SWOT Analysis

Strengths

High efficiency windturbines
Deep establishment in the industry
Strong R&D efforts
High future potential
Attractive products and a large installed base

Weaknesses

Dependent on a few key markets
Costly project development
Limited product portfolio: only wind turbine related
Reliant on government subsidies and incentives

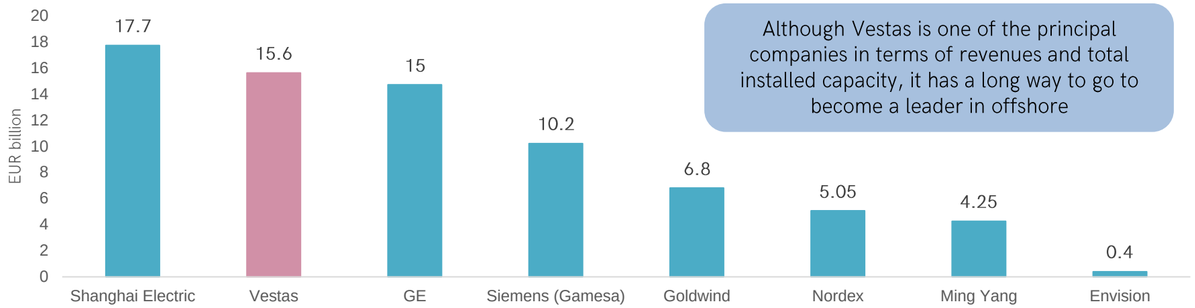
Opportunities

Green energy growth
Ever-growing market
Carbon-free energy
NGOs and governmental support

Threats

Growing competitor base
Growing manufacturing costs
Governmental red tape
Trade disputes
Natural disasters and unavailability of raw materials

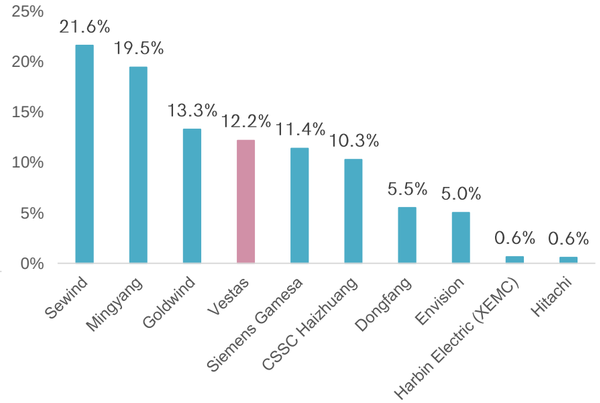
Vestas vs. Competitors: annual revenue 2021



Although Vestas is one of the principal companies in terms of revenues and total installed capacity, it has a long way to go to become a leader in offshore

Vestas vs. Competitors: total capacity installed

Share of annual offshore installed capacity globally 2021, by turbine manufacturer



Sources: (Goldwind, 2022); (Nordex, 2022); (Siemens Gamesa, 2022); (Fernández, 2023c); (Statista, 2023); (Statista Research Department, 2023); (Vestas, 2023a; 2023b); (D&B Business Directory, no date); (Dolcera, no date); (GE, no date b); (RocketReach, no date)

Vestas

Company Analysis

Strategic development

Objectives		Competitive Advantage		Scope	
Development	Maximize wind resources by developing new projects. Decarbonization	Wind turbines	Vestas designs, manufactures and sells	Global reach	Established all over the world
Onshore and Offshore Power solutions	Powering the renewable energy transition through innovation and scalable solutions	Wind power-plants	More effective with composition of wind turbines	Industry experience and expertise	Has been in the industry for many years
Service	Routine inspection, maintenance and upgrades	Energy storage solutions	Battery storage, hybrid power plants	Regionaliza-tion of the production	Focus on sustainable manufacturing while keeping costs down
Carbon neutral by 2030	Green electricity, industrial heating, emissions-reduced steel, help decarbonize suppliers	Software services	Smart software that optimizes energy production and efficiency	Comprehen-sive product portfolio	Offers a wide range of wind turbines technology.
Zero waste turbines by 2040	Recycle, increase material efficiency, improve repair structure	Installations and PM-services	Offers installation and commissioning services	Innovative technology	Forefront on wind-turbine technology. Large investments in R&D
Most inclusive and socially responsible	Decrease injury rate, increase % women in leadership, support affected communities	Upgrades	Upgrades to existing wind turbines, improve performance and lifespan	Strong brand and reputation	Recognized worldwide, especially for sustainability

Strategic supplier involvement tactics:

100% renewable energy requirements
Calculating and reporting carbon emissions for products delivered to Vestas
Setting targets for Scope 1 and 2 emissions by 2030 without using offsets
Measure and report waste for products delivered to Vestas

Customers

bp, Berkshire Hathaway Energy, ENGIE, EDF renewables, EDP renewables, TOTAL, IBERDROLA, Shell, aes, equinor

Business enablers

DSV, Mitsubishi Heavy Industries, CIP Copenhagen Infrastructure Partners, Maersk, VestasVentures

Component suppliers

Bladena, ZF, CS Wind, Schaeffler, winergy

Source: (Vestas, 2023a)

Vestas

Company Analysis

ESG: Vestas shows great efforts to improve environmental measures

Vestas has a large focus on renewable energy and is committed to reducing their environmental impacts and have a large focus on promoting sustainability in their operations.

Sustainability Targets and Performance

Carbon neutral by 2030	Producing zero waste turbines by 2040	Safest, most inclusive and socially responsible in the industry	Leading transition towards a world powered by sustainable energy
How: 1. Green electricity 2. Industrial heating 3. Emission-reduced steal 4. Help decarbonize suppliers	How: 1. Circular blades and up recycle solutions. 2. Increase material efficiency 3. Expand and regionalize repair and refurbishment structure.	How: 1. Decrease recordable injury rates 2. Increase % of women and foster inclusion based on all social identities 3. Increases affected communities	How: 1. Electrification: EV's and Power-to-X technology 2. Sustainable policy
Achievements: 1. Pioneered the first hydrogen powered vessel 2. Decarbonized steel production 3. In 2019 - 2022 emissions from operations decreased by 14,000t 4. In 2019 - 2022 supplier emissions decreased by 36 kg/MWh	Achievements: 1. Beak-through in blade recycling technology 2. Recycled 475 end-of-life legacy blades ensuring that existing blades no not end up in landfill 3. Increased refurbished component utilization rate to 17%	Achievements: 1. Recordable injury rate of 3.3 2. Increased number of women in leadership position to 23% 3. Refreshed the Human Rights Assessment to identify and assess risks and impacts	Achievements: 1. EV´s, build-out of charging infrastructure. 2. Hosted the North Sea Summit, where leaders committed to target offshore wind for at least 65GW by 20130 and 150GW by 2050 in the North Sea

ESG Risk Rating Morningstar

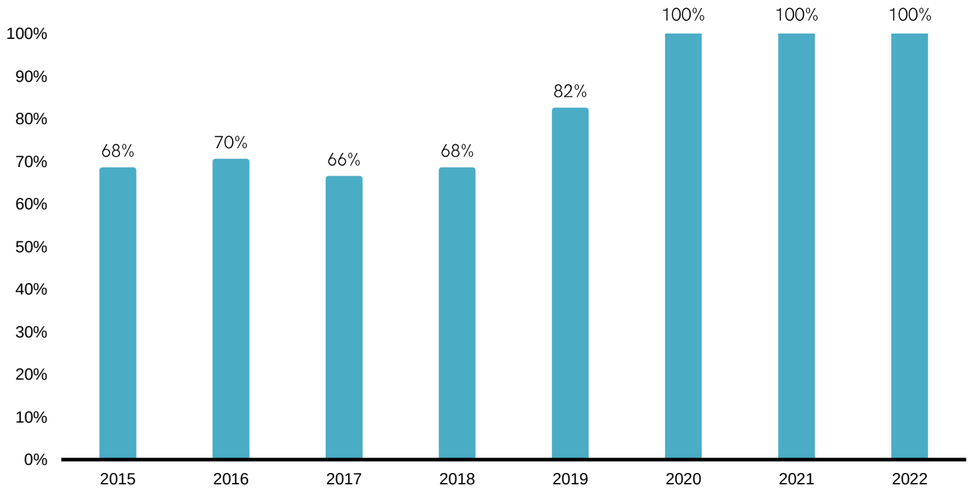
●●●●○ 18.7 Low Risk

Rankings:

Corporate Knight Global 100: Rank 2
CDP Climate: A
S&P Global DJSI: 78
Sustainalytics: 14.7; 5/217
MSCI: AAA
ISS ESG: B+
EcoVadis: silver - 64

Launched first-hydrogen powered offshore vessel in 2022
Reduced emissions from own operations by 12% since 2019
Works to minimize impact on birds and bats
The foundation of the offshore wind turbines can help create artificial reefs, help restore an ecosystem heavily damaged by overfishing

Renewable energy as a share of Vestas Wind Systems' energy



Sources: (Sustainalytics, 2022); (Statista, 2023); (Vestas, 2023a; no date j)

Vestas

Company Analysis

ESG: exemplary Vestas journey in the sphere of social

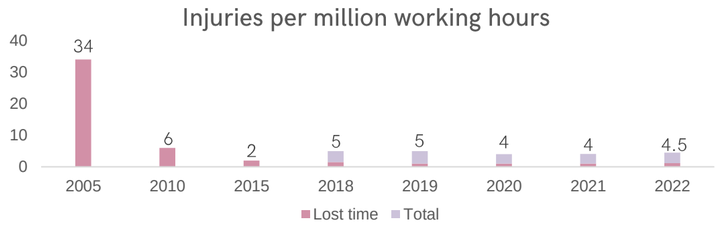
Vestas is committed to becoming the safest, most inclusive and socially responsible company in the energy industry.

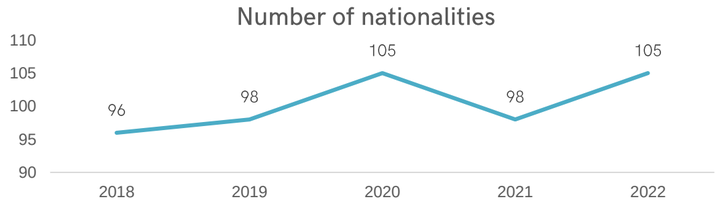
Human rights initiative	Safety performance	Diversity	Initiative
• Compliance and CSR function that oversees the policy and works to implement it across the organization • Employee code of conduct • Human Rights Assessment (HRA) by external sustainability experts • Whistleblower platform: Ethics line	• Reduce injury rates by 85% by 2030 • HSE system in line with ISO 45001 standards • Safety walks by managers • My Team MY Responsibility (MTMR): employee engagement in security • Vestas Behavioral Change program	• Gender, ethnicity and generational diversity • Employee resource groups for women, LGBTQ+, disabilities, etc. • Accessibility for employees with disabilities: accommodations • Software capable of scanning biased terminology • Pride Month, Women's Day, Black History month	• Community engagement initiatives. • Projects tend to focus on skills training, installing solar panels, repairing school toilets, providing locals with food and stoves.
• Brazil: Public school project • Jordan and Senegal: Food relief campaign • India: 13 rural pre-schools received materials	• Injury rate 2022: 3.3% • Increased women in leadership (2022): 23% • Documentation and PPE • Global safety day 2022 • Collaborating with G+	• Increase share of women in leadership positions by 30% by 2030 • Partnership with The Professional Women of Color Network • Most ethical company (Ethisphere, 2021)	• Senegal: Customized solution for first wind-park • Dominican Republic: Installed first wind-turbine • India: Community program • Argentina: Wind Farm

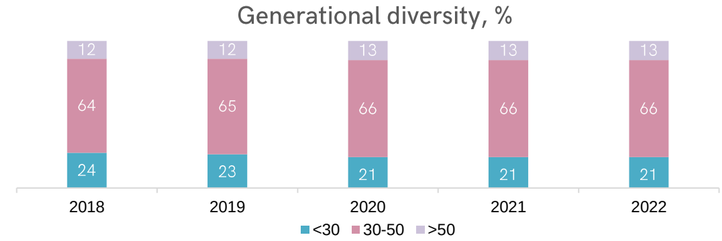
Human Rights Journey

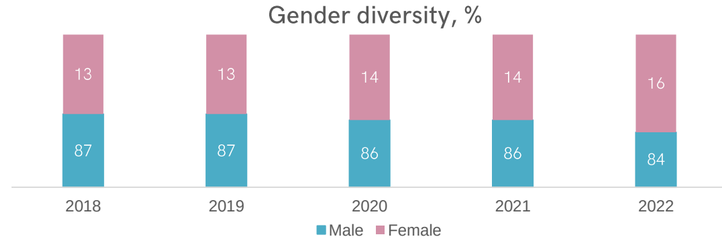
- 2011: Human Rights team is established
- 2010: Human Rights Policy is developed and launched
- 2009: Signs UN Global Compact
- 2012: Social Due Diligence tool is established
- 2015: Policies,Due Diligence externally reviewed
- 2020: CSR strategy is launched
- 2021: supporting legislation on human rights

UN sustainable development goals covered









Sources: (Vestas, 2023a; 2023b; no date j; no date k); (*Vestas Safety*, no date)

Vestas

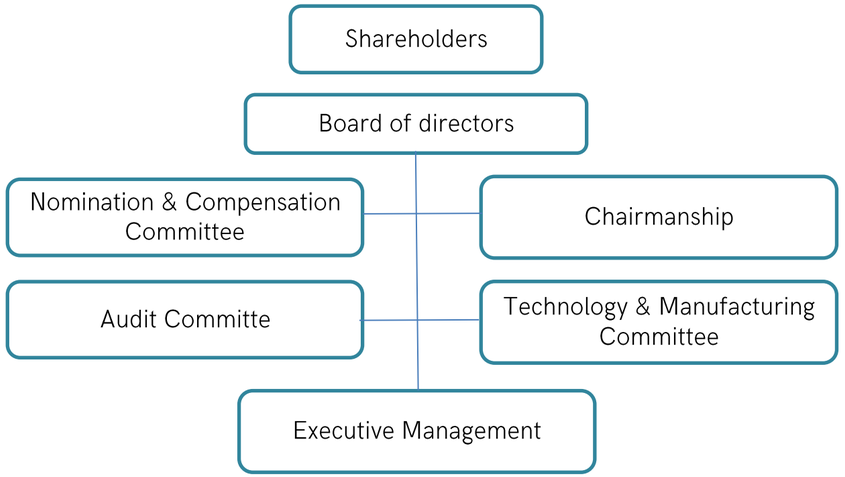
Company Analysis

ESG: Vestas governance structures leave no room for error

The values of Accountability, Collaboration, Simplicity and Passion, together with Vestas Code of Conduct, as well as other policies are the main drivers of their commitment to transparency and integrity.

Risk management	Board of directors	Day-to-day management	Share and bond
• Identify, record, assess and monitor all risks, reported to risk officers • Five main risks: 1. Geopolitical environment & macroeconomy 2. Supply chain disruptions 3. Regulatory pace & scalability 4. Cyber risks 5. People risks	• Board diversity: 37(F)/63(M) • Independent board, cannot have been a member of the executive management or an employee in the past 5 years • Elected for one year at the time	• Globally visible to all stakeholders • Executive management meets at least once a month • Data ethics reports and policy • Make sure they are meeting targets and financial goals	• Second most traded share • Shareholder diversity • External review (DNV) • Euro Medium Term Note (framework for issuance of long-term notes) • Credit facility signed in 2021 • Credit rated by Moody's
• Overseen by the audit committee • Reviewed every six months • Whistle blower mechanism and Speak Up Campaign • Runs the Global ABC survey • Code of conduct	• Two-tier structure consisting of the board and executive management • Five meetings a year • Election by shareholders and employees • Board Remuneration (2022): DKK 910 000	• Updates key targets and key performance quarterly • R&D • Extensive supplier registration process	• Daily turnover (2022) 520M DKK, 10% of the total OMX C25 index • Shareholders from 100 different countries, dominated by the US, UK and Denmark • Operations are financed from own Cash Flow

Management structure



General structure

- CEO and Executive Team
- Has several functional departments: R&D, Finance, HR and Legal
- Has a global presence, so regional managers oversee operations
- Business Units: Service, Construction and Manufacturing
- Employees are grouped together based on area (manufacturing, sales, marketing, etc.)

Memberships

- Global Wind Energy Council
- Wind Europe
- American Clean Power
- World Economic Forum
- Other 100+ associations
- 3.5mn EUR membership fees

Sources: (Vestas, 2023a; no date j; no date l)

COMPANY ANALYSIS

SIEMENS

Siemens

Company Analysis

General overview of the German conglomerate

German multinational conglomerate focused on industry, infrastructure, transport, and healthcare, est. 1847, 311,000 employees, 190+ countries.

Leading company in healthcare market

Publicly traded company since 1899, listed on the Frankfurt and New York Stock Exchange

Market capitalization: 124.32bn USD

Key goal

Net Zero Operations by 2030

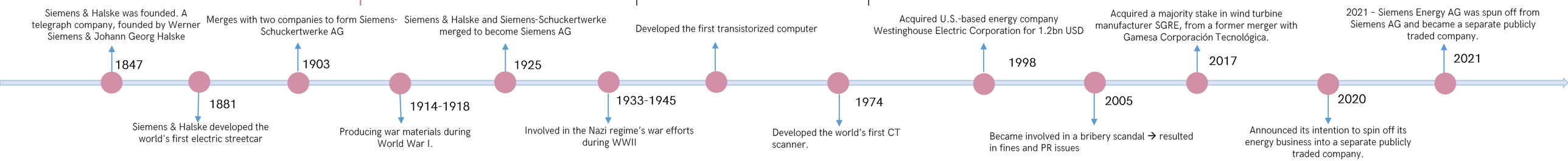
Key Performance Measures by Segment

Digital Industries	Smart Infrastructure	Mobility	Healthineers
Orders (mn EUR) 2022: 25,283 2021: 19,517	Orders (mn EUR) 2022: 20,798 2021: 16,071	Orders (mn EUR) 2022: 13,200 2021: 12,296	Orders (mn EUR) 2022: 25,556 2021: 20,320
Profit (mn EUR) 2022: 3,892 2021: 3,360	Profit (mn EUR) 2022: 2,222 2021: 1,729	Profit (mn EUR) 2022: 794 2021: 850	Profit (mn EUR) 2022: 3,369 2021: 2,847
Profit Margin 2022: 19.9% 2021: 20.3%	Profit Margin 2022: 12.8% 2021:11.5%	Profit Margin 2022: 8.2% 2021: 9.2%	Profit Margin 2022: 15.5% 2021: 15.8%

Financial performance 2022
Revenue: 72bn EUR
Net income: 4.4bn EUR
15.1% EBITA margin in Industrial Business

Financial outlook for 2023
Expected revenue growth: 7-10%
Digital industries: 12-15% CRG
Smart infrastructure: 9-12% CRG
Mobility: 6-9% CRG

Long-term financial ambition
Comparable Revenue Growth: 5-7%
Cash conversion rate: 1-growth
Profit margin: 17-23%



Sources: (Dolan, 2001); (Siemens, 2022c; 2022d; 2022e; 2023a; 2023d; 2023g; 2023i); (CompaniesMarketCap, no date)

Siemens

Company Analysis

Diving deeper into Siemens offerings: full focus on digital

Smart Infrastructure Offers products, solutions, and services for intelligent infrastructure	**Healthineers** Provides medical technology and services to help healthcare providers improve patient outcomes	**Mobility** Offers solutions for sustainable, efficient, and safe transportation	**Digital Industries** Provides solutions for the digital transformation of industrial enterprises
Portfolio Electrification – 27% Buildings – 42% Electrical Products – 31%	**Portfolio** Imaging Diagnostics Varian Advanced Therapy	**Portfolio** Rolling stock – 46% Rail infrastructure + Software – 38% Customer services – 16% Turnkey – n/a	**Portfolio** Software – 24% Factory Automation, Motion Control, Process Automation – 69% Customer Services – 7%
Revenue 2022 17,353mn EUR	**Revenue 2022** 21,715mn EUR	**Revenue 2022** 9,692mn EUR	**Revenue 2022** 19,517 EUR million
Main Competitors and Their Revenue* Schneider Electric – 34,176mn EUR ABB - 27,648mn EUR Johnson Controls – 23,755mn EUR Honeywell – 33,300mn EUR	**Main Competitors and Their Revenue*** GE (Healthcare) – 17,334mn EUR Philips - 17,827mn EUR Elekta – 1,306mn EUR (FY21/22) Roche – 63,473mn EUR Abbott – 40,987mn EUR	**Main Competitors and Their Revenue*** Alstom – 15,471mn EUR (FY21/22) CRRC – 30,675mn EUR (FY21) Stadler – 3,646mn EUR (FY21)	**Main Competitors and Their Revenue*** Cadence – 2,806mn EUR Ptc -1,815mn EUR Schneider Electric - 34,176mn EUR Dassault Systemes- 4,860mn EUR (FY21) Rockwell Automation – 7,287mn EUR Emerson – 18,431mn EUR ABB - 27,648mn EUR
Key Targets Comparable revenue growth: 4-6% Resilient service revenue growth p.a: 6-9% Profit margin: 11-16% CCR: 1-growth	**Key Targets** Expand #1 position in Imaging Growth and margins expansion in Diagnostics	**Key Targets** Comparable revenue growth: 5-8% Service backlog growth: >8% Profit margin: 10-13% CCR: 1-growth	**Key Targets** Comparable revenue growth: 5-7% CAGR for software ARR: >10% Profit margin: 17-23% CCR: 1-growth

*Where company revenues were presented in another currency, the EURO exchange rate of 3.5.2023 was used for conversion

Industries Served

Chemicals | Paper | Waste and Waste-water | Wind | Electronics | Power and Utilities | Glass | Marine | Machine Building | Batteries | Tire | Additive Manufact-uring | Robotics | Intralogistics | Food and Beverage | Cranes | Automotive | Aerospace | Minerals | Oil and Gas | Pharmaceu-ticals

Sources: (Alstom, 2022); (Cadence, 2022); (Dassault Systemes, 2022); (Emerson, 2022); (ptc, 2022); (Siemens, 2022a; 2023a; 2023b; 2023d; 2023e; no date c); (Simply Wall St, 2022); (Stadler, 2022); (ABB, 2023); (GE, 2023); (Roche, 2023); (Schneider Electric, 2023); (Siemens Healthineers, 2023a; 2023b); (Siemens Mobility Solutions, 2023); (CRRC Corporation Limited, no date); (Elekta, no date); (Macrotrends, no date a; no date c); (Philips, no date); (Rockwell Automation, no date); (Siemens Mobility, no date)

Siemens

Company Analysis

Track record highlights exceptional performance, as well as multiple M&As

Global Footprint: 10 global centers; 80 countries	Americas	EMEA	Asia Pacific
Revenue: EUR72 billion	29%	47%	25%
Factories: 180	25%	49%	26%
Purchasing volume: EUR35 billion	23%	54%	23%

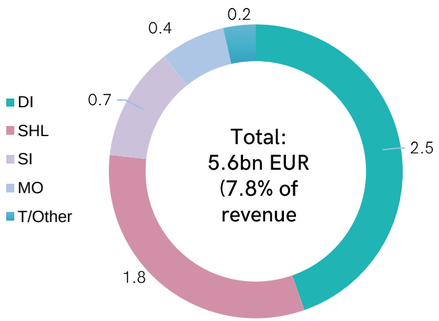
1 **In Factory Automation**
45 million installed automation systems

1 **In Rail Automation**
14,000 railway vehicles and 3,000 interlockings

1 **In Grid Automation**
>2.5 million protection relays and >200k substation automation systems

1 **In Vertical Software**
12,700 software engineers in DI Software

Siemens R&D investments in 2022,(bn UR



Current company positioning allows to assume its deep consolidation into digital industries. Siemens current activities – M&A trends, R&D investments, and businesses focus solely on further expansion in tech.

Business model

Core business growth by leveraging digital capabilities ⟷ Digital business growth by leveraging core business

Sources: (Mergermarket, 2023); (Siemens, 2023b; no date e)

Key Technology Offerings

- Simulation and Digital Twin
- Sustainable Energy and Infrastructure
- User Experience
- Software Systems and Processes
- Connectivity and Edge
- Cybersecurity and Trust
- Data Analytics and AI
- Integrated Circuits and Electronics
- Power Electronics
- Automation
- Additive Manufacturing and Materials

Acquisition History, 2018-2023

Sector	Geography	No. of deals	Total deal value
Automotive	Canada	1	n/a
Computer software	US, Panama, Spain, France, Netherlands, Sweden, Germany, UK, Israel	19	4bn USD (+14 deal value unknown)
Semiconductors	UK	1	50.5mn USD
Electronics	US, Germany, Norway	6	456mn USD (+2 deal value unknown)
Energy	US, Spain	2	1.7bn USD
Internet / ecommerce	Germany	1	n/a
Medical	US	1	54mn USD
Consulting services	UK	1	n/a

Siemens

Company Analysis

Internal and external analysis shows leadership in automation and medical

Smart Infrastructure
Competitive advantages

Products are end-to-end solutions
Products are designed to be scalable
Products are highly sustainable

Healthineers
Competitive advantages

Large portfolio
Highly innovative products
Reliable and solid performance
Focus on customer satisfaction

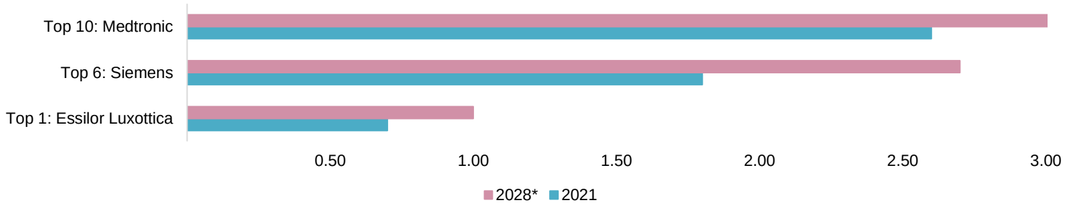
Mobility
Competitive advantages

Advanced technology
Customizable to a high extent
Strong global presence and reach

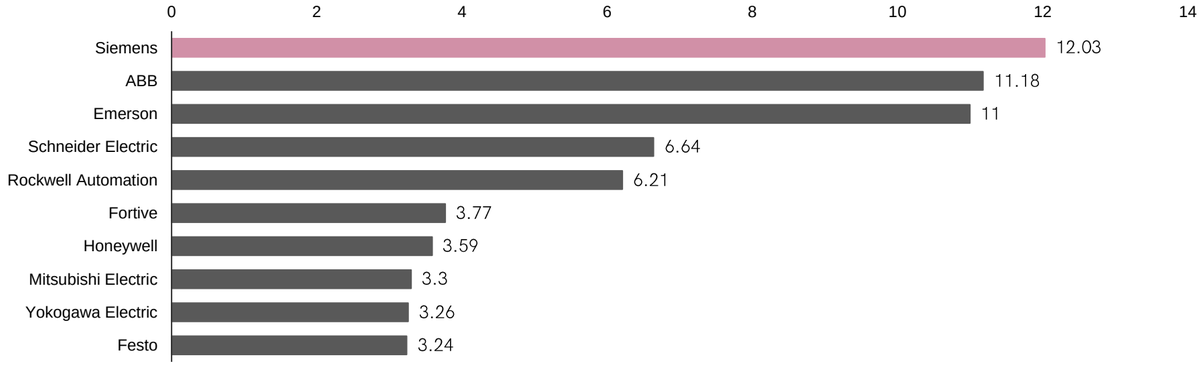
Digital Industries
Competitive advantages

Comprehensive portfolio
Highly integrable products
Highly focused on innovation

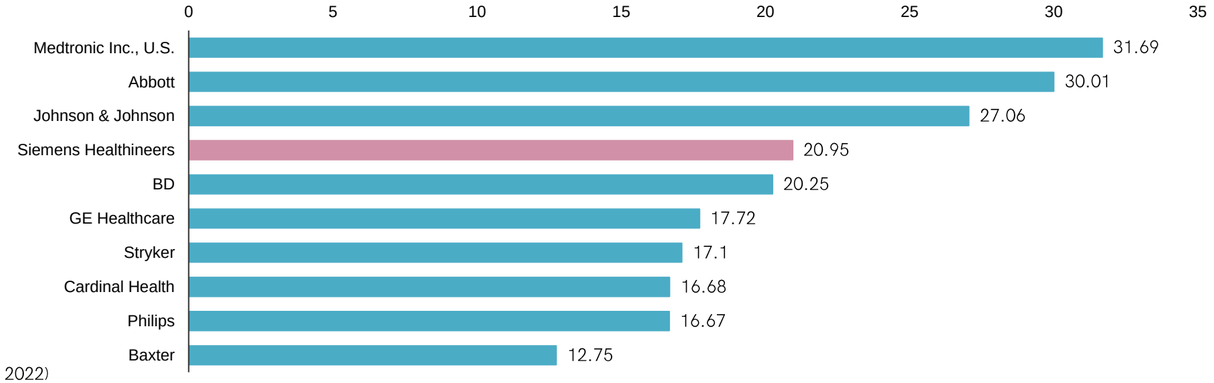
Top companies by medical technology R&D spending 2021 and 2028 (BN USD)



Leading automation vendors worldwide in 2020, based on revenue (in billion U.S. dollars)



Leading medical technology companies worldwide based on revenue in 2021 (in billion U.S. dollars)



Strengths

Operations in over 190 countries
Strong advertising and global appearance
Strong product portfolio
High customer satisfaction

Weaknesses

Large competition in many markets
Largely dependent on third party providers
Multiple lawsuits faced
Corruption allegations

Opportunities

Grasping the growth of digital services
Increase in demand for green electric products
Growth in digital consulting

Threats

Strict government and ESG policies
Largely dependent on economic and liability laws in many countries

Sources: (Venard, 2018); (Statista, 2022); (Stewart, 2022); (*SIEMENS scandal: Court of Appeals acquits 20 Greek and German executives*, 2022)

Siemens

Company Analysis

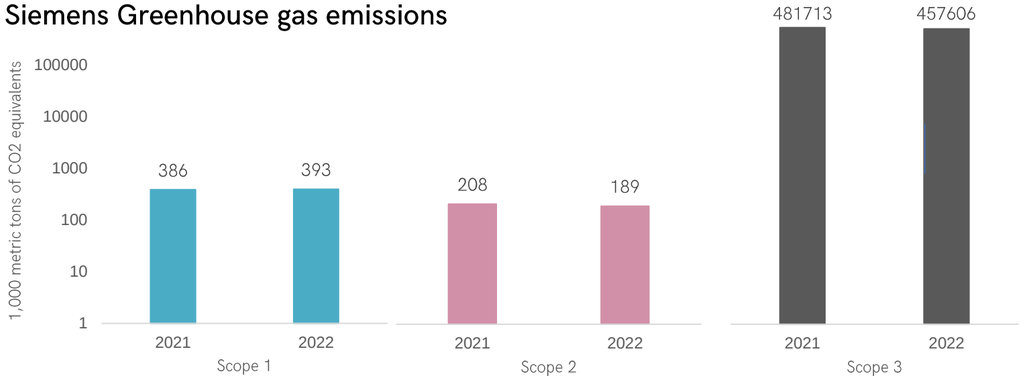
ESG: strong efforts in environmental, but a long way awaits

Siemens takes sustainability as a core part of their business, prioritizes technology with sense and purpose, and creates a sustainable business with sustainability in operations, all while following their self-developed framework; DEGREE: D - Decarbonization, E - Ethics, G - Governance, R - Resource efficiency, E - Equity, E - Employability

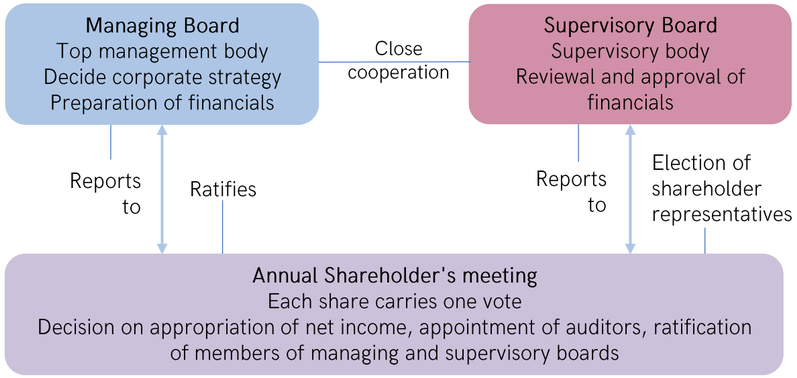
ESG Risk Rating Morningstar

Rankings:
MSCI: AA
ISS ESG: Prime
Sustainalytics: 30.1
S&P DJSI: 80
EcoVadis: 70
Vigeo Eiris: 59

Siemens Greenhouse gas emissions



Siemens' two-tier board structure



Current ESG goals and progress

Net zero operations by 2030	Net zero supply chain by 2050	Natural resource decoupling	Waste landfill reduction of 50% in 2025, and zero in 2030	Train 100% employees on business guidelines every 3 years	Zero-tolerance to law breaches and guidelines	30% female share in top management by 2025
How: 1. Leasing buildings with no net CO2 emissions 2. Use of an internal CO2 price 3. Reduce motor fleet emissions	How: 1. Circular blades and up recycle solutions. 2. Increase material efficiency 3. Expand and regionalize repair and refurbishment structur e.	How: 1. Increased purchase of secondary materials for metals and resins 2. Environmentally compatible product design based on established standards	How: 1. Implying worldwide workshops 2. Finding alternative methods to manage waste	How: 1. Raising awareness internally	How: 1. Collaboration across borders to fight corruption 2. Implying a more employee-oriented compliance system	How: 1. Increase number of female employees 2. Develop the GLOW@TI network for women
Achievements: 1. 150 Mt in Customer Avoided Emissions in 2022 2. Reduction in emissions by 46% compared to 2019	Achievements: 1. Reduction in emissions by 138.1% (compared to 2020)	Achievements: 1. 34% of purchase volume consists of secondary materials	Achievements: 1. Reduction in landfill waste by 12%	Achievements: 1. 99.9% of employees have received training (2022), compared to 76.0% the year before.	Achievements: 1. Early detection of internal misconduct	Achievements: 1. 27.7% of employees in top management are female

Sources: (Siemens, 2019a; 2019b; 2022b, 2022c; 2022f; 2022h; 2022j; 2022k)

Siemens

Company Analysis

On the track to become a digital leader. Does wind energy fit into equation?

In 2017, Siemens Wind Power – separate from Siemens - acquired Gamesa – another prominent player in the wind energy market established in 1976 and formed Siemens Gamesa Renewable Energy.

Until 2020, Siemens AG itself managed two energy divisions together with the business segments mentioned beforehand. The segments were merged into Siemens Energy AG – an independent company in April 2020.

As of 2023, Siemens AG owns 40% of Siemens Energy which owns 92.7% of Siemens Gamesa shares intending to acquire the remaining 7.3%, as the company is experiencing operating issues.

Siemens AG connection to the wind industry – through digital and financial solutions

Digitalization

Digital twins for wind turbines
Digital twins for operations
Digital twins for maintenance and services
Digital wind turbine models for development
Virtual controllers
Optimization tools

Power Transmission and Distribution

Switchgears
Transformers
Busbars
Low-voltage products

Turbine and Wind Farm Management

Multilevel Wind SCADA Center (MWSC) – multilevel software with integrated control tools

Industrial Communication

SCALANCE – for industrial communication
RUGGEDCOM – for smart grid applications
SINEMA Remote Connect – management platform for remote networks
RUGGEDCOM WIN– wireless communication tool
SINEC NMS – network management system

Turbine Automation

Automation software
Industrial systems
Peripherals

Turbine Protection

Main circuit protection: 3WL air circuit breakers; SIRIUS 3RT contactors; LDM and LD busbar trunking systems
Auxiliary circuit protection: 3VA molded-case circuit breakers; 3NP1 fuse switch disconnectors
Systems for fire protection
Products for overvoltage protection

Cloud-Based Condition Monitoring

System design and plant integration through totally Integrated Automation (TIA)
Devices for condition monitoring

Auxiliaries

Pitch control
Yaw control and monitoring
Other control components and systems

Security of Wind Turbines

Cybersecurity solutions for:
Plant security
Network security
System integrity

Energy Finance

Debt and equity financing solutions for onshore & offshore wind products

Sources: (Statista, 2022); (Simply Wall St, 2023); (Steitz and Landauro, 2023); (Siemens, no date a; no date b; no date d, no date f; no date g; no date h; no date i; no date j); (Siemens Gamesa, no date a)

Siemens Energy

Company Analysis

Another Siemens link to renewable energy

Company description

Headquarter: Munich Germany
Employees: 92'000

Revenue: 28.9bn EUR
EBITDA: 526mn EUR

Major Shareholders	Ownership
Siemens Aktiengesellschaft	38.5%
JPMorgan Chase & Co, Brokerage and Securities Investments	5.8%
BlackRock, Inc.	2.9%
The Vanguard Group, Inc.	2.2%
Norges Bank Investment Management	1.5%

Strategy and R&D focus - Energy landscape transformation and decarbonization

- Decarbonized heat and industrial processes
- Power-to-X
- Resilient and reliable power transmission
- Condition-based service interventions
- Energy storage

R&D in 2022: 1,078mn EUR

Main Business Segments until FY 2023		
Segment	**Gas and Power**	**Siemens Gamesa Renewable Energy**
Product portfolio	**Transmission**: products, systems, solutions, and services for power transmission **Generation**: products, systems, solutions, and services for central and distributed power generation and decarbonization **Industrial applications**: solutions for energy transition **Other Operations**: new technology development in decarbonized energy and storage systems	**Wind turbines**: design, development, manufacturing and installation of wind turbines **Operation and maintenance**: services for operation, maintenance, and optimization of wind turbines, assets management, technical assistance
Revenue	19,280mn EUR	9,814mn EUR

Main Business Segments starting from FY 2023				
Segment	**Gas Services**	**Grid Technologies**	**Transformation of industry**	**Siemens Gamesa Renewable Energy**
Profit margin 2025	10-12%	8-10%	6-8%	n/a

Company Performance	Low- or zero-emission power generation		Transport and storage of electricity	Reducing CO2 footprint and energy consumption in industrial processes
Market position	1 Offshore 3 Onshore	1 Gas turbines >10MW2	1	Leading market positions
Examples	>100GW wind turbine installations	7,800 units of rotating equipment installed	Global leader in HVDC installations Most comprehensive SF6-free switching portfolio	>60,000 Industrial steam units and >25,000 Compression units in Service Fleet

Sources: (Siemens Energy, no date a; no date b)

Strategic Fit

Company Analysis

Vestas + Siemens = A good match so far?

✓ YES

1. **Alignment of environmental goals:** carbon-free by 2030
2. **Competition take-out**: Vestas is currently the leading OEM in the market, thus its acquisition by Siemens AG would help out the struggling Siemens Gamesa Renewable Energy almost fully owned by Siemens Energy
3. **Market Experience:** Vestas' market knowledge and experience would help Siemens AG better develop its digital and financial products for the wind industry
4. **Cost savings**: potentially minimized costs through synergies in procurement, manufacturing, and R&D
5. **Grasping offshore:** with the offshore wind market being quite novel, Vestas comes as a great tool in discovering it and developing solutions for it
6. **Supplementation:** Siemens' capabilities in wind energy digitalization would supplement Vestas' capabilities in manufacturing
7. **Seizing the moment:** with the wind industry growing, investments into it might offer great returns, and would expand Siemens presence in the market
8. **Access to suppliers:** with Vestas' acquisition, Siemens would gain access to its suppliers needed for their product development
9. **Portfolio diversification:** adding Vestas' turbines would diversify Siemens offerings, and would help mitigate risks in the case of demand fluctuations elsewhere

✗ NO

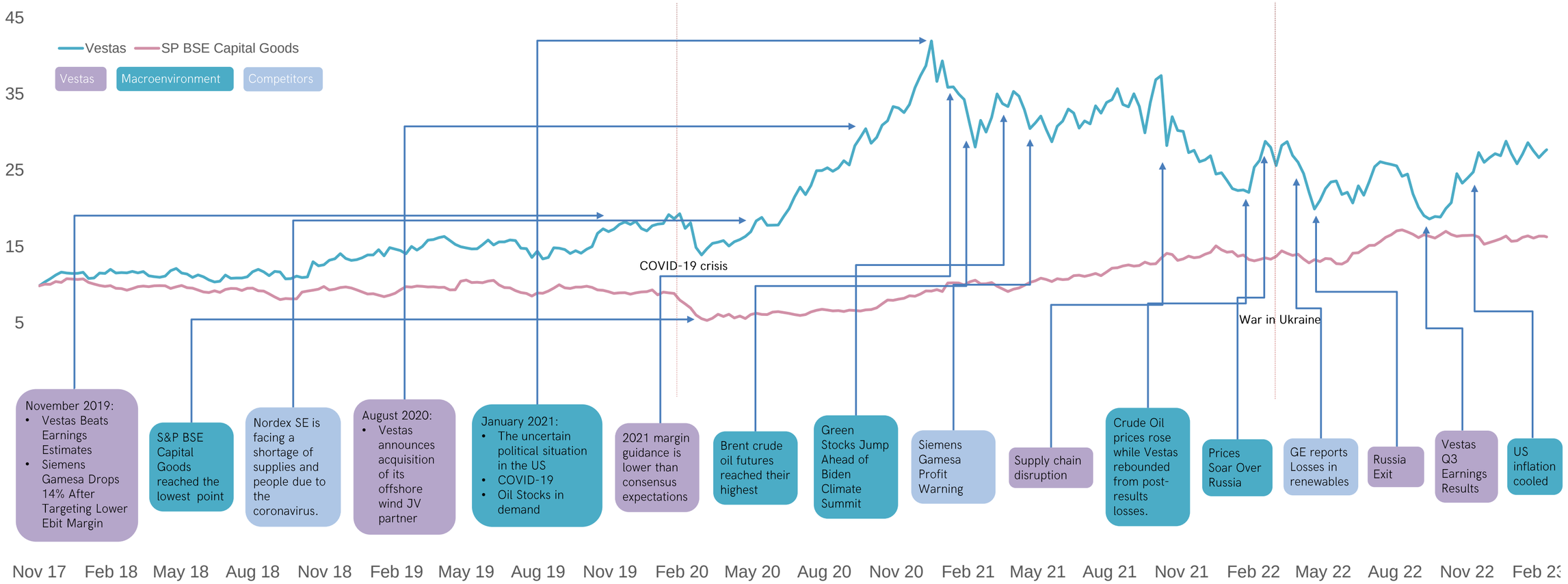
1. **Strategic mismatch:** Siemens has already backed away from the wind industry a few years ago, and is mostly focusing on digital industries
2. **Acquisition costs:** it might be extremely costly to acquire Vestas as it holds leading positions in the wind industry, thus affecting Siemens financing into other key areas of business
3. **Integration hurdles:** merging two companies from different industries might bring additional challenges
4. **Regulations:** compared to Siemens' current businesses, the wind industry is subject to numerous regulations, which could slow down the process
5. **Market competitiveness:** with the growing competition in the wind market, the acquisition process could limit Vestas from its key operations, therefore, diminishing its market share
6. **Limited expertise:** as Siemens transferred all its wind turbine manufacturing expertise into Siemens Energy, it might come challenging to effectively manage Vestas
7. **Differences in business models:** Siemens, as a digital industries company, operates on a completely different business model than Vestas – a manufacturing and operations company
8. **Cultural hurdles:** Vestas' Danish organizational culture might clash with Siemens' German culture

FINANCIAL ANALYSIS

Share Price Analysis

Financial Analysis

Vestas' stock price over time – macro sensitive



Max. target price	16,79
Avg. target price	28,26
Min. target price	48,37

52	Week High	32,50
52	Week Low	17,64
52	Week Change	-4,25%
52	Week Avg. Price	27,42

Vestas' stock price heavily depends on the current macro situation.
Slow outperformance starting in 2018 and accelerating in 2020.

Avg. Volume	2 149 677
Avg. Vol (3 month)	2.15M
Beta (5Y Monthly)	1.16
Shares Outstanding	1.01B

Buys	39%
Holds	36%
Sells	26%

Source: Bloomberg, Team Analysis

Vestas Potential Peer Group

Four different peer groups were found

Western OEMs

The **products** and the **primary markets** are the same. However, Vestas has slightly **higher technological moat**.

SIEMENS energy

GE

NORDEX We've got the power.

Western Solar Equipment

These companies operate in the **renewable energy equipment sector**.

CanadianSolar

SUNPOWER®

ARRAY TECHNOLOGIES

SMA

Vestas

Chinese OEMs

Chinese OEMs are **mainly strong in China**, where significant Government support is provided.

GOLDWIND

上海电气 SHANGHAI ELECTRIC

High Quality Capital Goods

In simple terms, Vestas' core products are **capital goods** combined with **higher margin service business**.

STADLER

OTIS

Schindler

KONE

Vestas Potential Peer Group

A description of the peer companies

Western OEMs

SIEMENS energy	13bn EUR	The company offers power generation, transmission, wind turbines, technical consultancy, and operation and maintenance services.
GE	79bn EUR	The company's products and services include aircraft engines, power generation, water processing, and household appliances to medical imaging, business, and consumer financing, and industrial products.
NORDEX We've got the power.	3bn EUR	The company designs and produces blades, control systems wind turbines. The company also offers service solutions for their clients.

Chinese OEMs

GOLDWIND	13bn EUR	The company produces wind turbines, wind turbine components, wind power generation sets, and other equipment. Additionally, the company offers wind farm development, photovoltaic product manufacturing, and other businesses.
上海电气 SHANGHAI ELECTRIC	18bn EUR	Shanghai Electric manufactures power generation equipment. The Company produces and sells thermal generator sets, nuclear power units, wind power equipment, power transmission and distribution equipment, and other products.

Western Solar Equipment

CanadianSolar	6bn EUR	Canadian Solar designs, manufactures, and sells solar modules.
ARRAY TECHNOLOGIES	4bn EUR	Array Technologies designs and manufactures solar tracking systems.
SUNPOWER	3bn EUR	The company designs, manufactures, and markets high-performance solar electric power technologies.
SMA	2bn EUR	SMA specializes in photovoltaic systems technology. SMA is headquartered in Germany, and operates worldwide.

High Quality Capital Goods

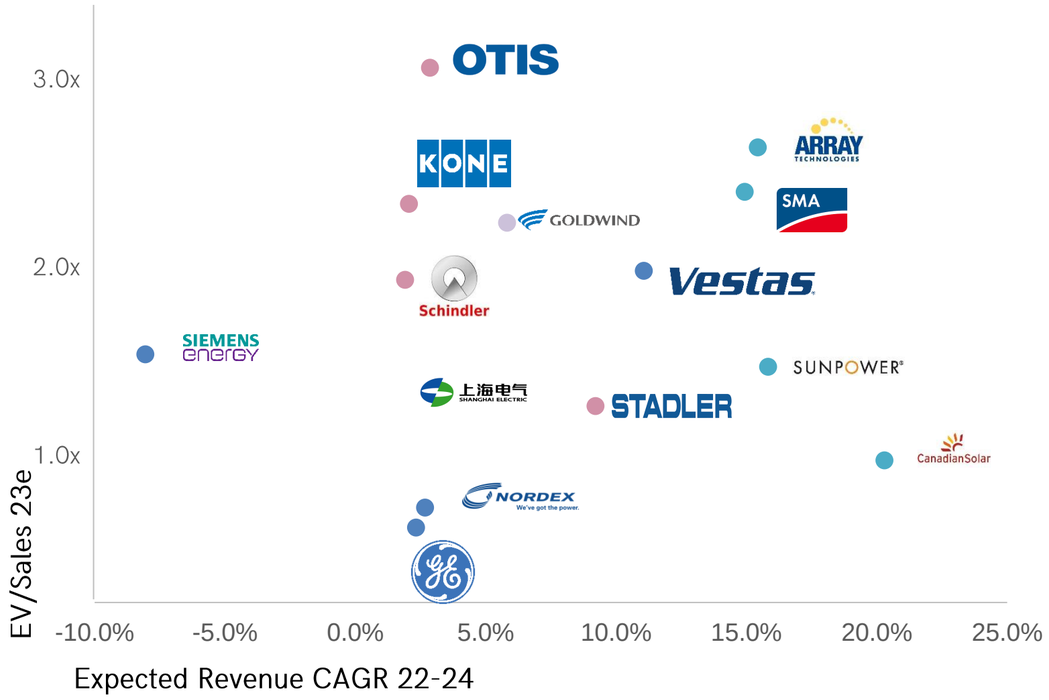
STADLER	4bn EUR	Stadler Rail AG engineers, manufactures and offers services for suburban and regional transport trains, light rail vehicles, and trams.
OTIS	39bn EUR	Otis Worldwide Corporation manufactures, installs, and services elevators, escalators, and other moving products
Schindler	20bn EUR	Schindler Holding AG manufactures and installs elevators, escalators, and moving walkways. Schindler also offers maintenance services.
KONE	24bn EUR	Kone OYJ provides solutions for the installation, maintenance , and modernisation of elevators and escalators.

Source: Bloomberg, Team Analysis

Relative valuation EV/Sales 23e

Vestas trades close to focused OEMs but possible multiple expansion to HQCG

Financial Analysis



Western OEMs
Siemens Energy and GE are larger conglomerates and have several product categories at the end of their lifecycles. Therefore, they trade at a lower multiple and have lower growth. Nordex is too small to survive in the market and therefore trades at a discount.

Western Solar Equipment
The average trades at 1.7x EV/Sales 23e in line with Vestas. Solar companies have grown more strongly because solar projects can be implemented faster than wind power projects. Furthermore, solar projects can be built closer to the consumer, which requires fewer high-voltage lines.

Chinese OEMs
Chinese OEMs trade 6% higher than Vestas. The expected growth is lower as the Chinese market has grown strongly in the past years, and the base is higher. It is questionable whether Chinese OEMs can grow with their technology outside China.

High Quality Capital Goods
The group trades 10% higher than Vestas despite lower expected growth in the coming years. This is due to 1) higher profitability and 2) the low volatility, high margin service business accounts for a larger part.

	Western OEMs	Chinese OEMs	Western Solar Equipment	High Quality Capital Goods
Min	0.4x	1.1x	0.8x	1.8x
Max	1.4x	2.1x	2.5x	3.0x
Average	0.8x	1.6x	1.7x	2.3x
Relative to Vestas	-58%	-12%	-6%	26%

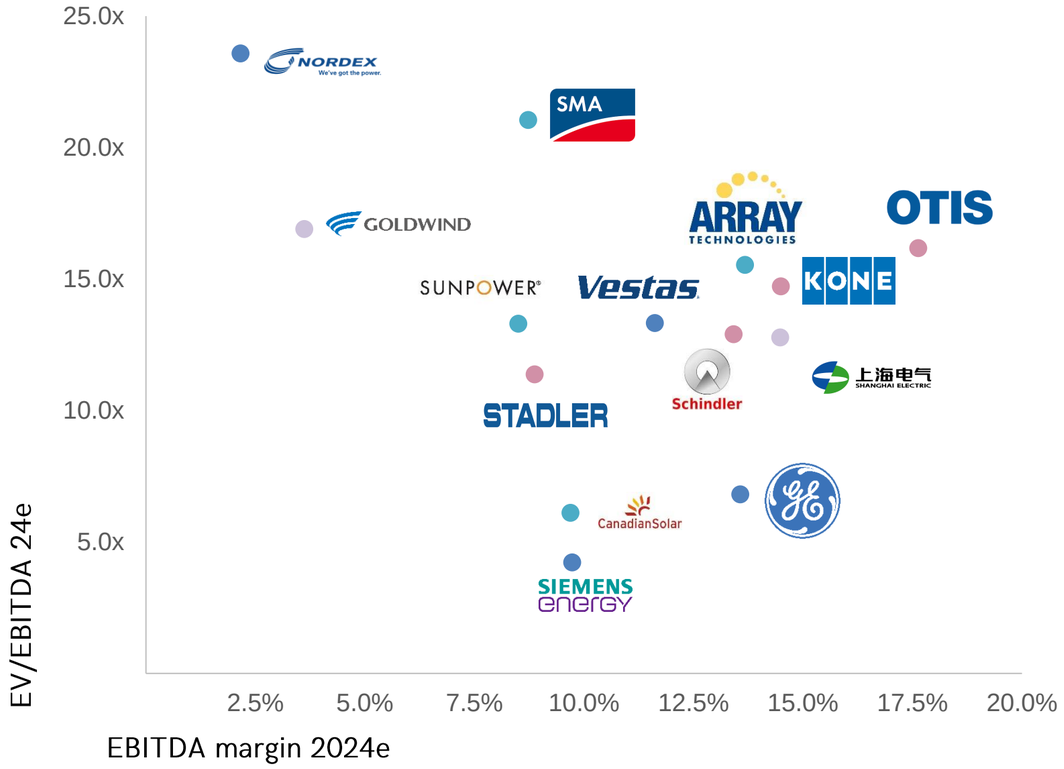
Conclusion
- Western OEMs are not used due to lack of focus and profitability problems
- Chinese OEMs and Western Solar Equipment's have similar risk/returns
- However, there is a possible multiple expansion due to higher valued High Capital Goods companies when the markets start to value the service part.

Source: Bloomberg, Team Analysis

Relative valuation EV/EBITDA 24e

Vestas trades at a small discount compared to close peers

Financial Analysis



Western OEMs
Nordex trades at 24x EV/EBITDA 24e because EBITDA is very low due to restructuring.
GE and Siemens Energy trade at lower multiple due to several product categories at the end of their lifecycles

Western Solar Equipment
The companies trade on average with a comparable EV/EBITDA 24e multiple. Furthermore, the EBITDA margin is also comparable.

Asian OEM
Chinese OEMs are trading at a premium of around 11% despite a lower expected EBITDA margin. Unlike Vestas, they do not need to increase their EBITDA margin compared to today, which is associated with operational risks.

High Quality Capital Goods
The companies trade on average with a comparable EV/EBITDA 24e multiple. Furthermore, the EBITDA margin is also comparable.

	Western OEMs	Chinese OEMs	Western Solar Equipment	High Quality Capital Goods
Min	4.2x	12.8x	6.1x	11.4x
Max	23.6x	16.9x	21.0x	16.2x
Average	11.5x	14.8x	14.0x	13.8x
relative to Vestas	-13%	11%	5%	4%

Conclusion
- Western OEMs median trades lower than Vestas because of worse growth opportunities
- Chinese OEMs and Western Solar Equipment's have similar risk/returns

Source: Bloomberg, Team Analysis

Vestas Key Ratios

Financial Analysis

Vestas lost profitability in the recent year due to operational problems

ASP (MV/EUR)

- Vestas' focus on R&D has allowed it to develop more efficient and reliable wind turbines.
- The raw material prices increased in the recent years significant and thanks the technological moat, Vestas can increase prices faster than competitors.
- Compared to its peers, starting from the end of 2020, Vestas had a higher price per MW sold than SGRE and Nordex.

Book to Bill

- Since 2015, Vestas has been getting more and more orders in advance. Due to:
- A growing demand for renewable energy and the increasing adoption of wind power.
- Vestas' geographic expansion and new partnerships in new markets

Margin

- Increased competition in the wind energy market has pressured pricing and profit margins—the cost structure of Vestas' business. The appreciation of raw material prices and labor could have increased.
- Currency fluctuation due to different market currency exposures.
- The margins went negative due to no pass through clauses in the order in the book and increased provision because of higher than expected guarantees payment.

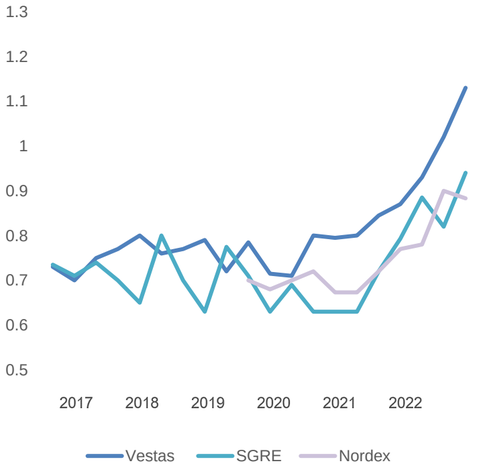
Efficiency ratios

- Vestas has been improving its asset utilization and operational efficiency.
- Vestas' focus on cost management and optimization.
- The improvement form 2021 to 2022 is mainly driven by more efficient net working capital management

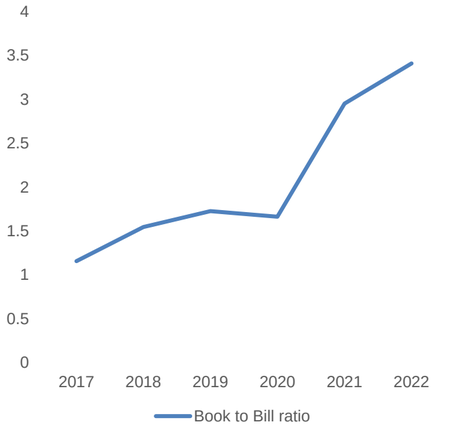
DuPont

- The ROA went down because the EBIT margin decreased significantly.
- Increased competition in the wind energy market.
- The COVID-19 pandemic caused disruptions in the global supply chain.

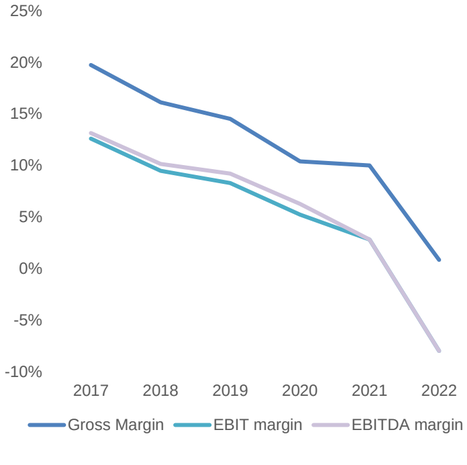
ASP in onshore orders (EUR/MW)



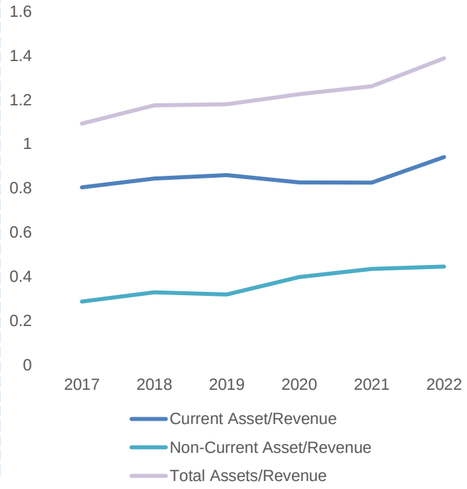
Book to Bill ratio



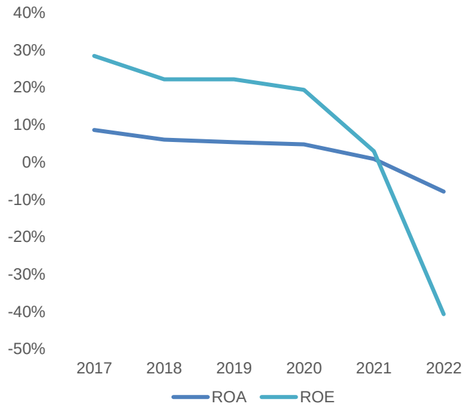
Margins



Efficiency ratios



DuPont Analysis



Source: Bloomberg, Team Analysis

Revenue Projection & Margin Recovery

Financial Analysis

Strong revenue growth over the next decade and better cost discipline

Revenue Growth Projection

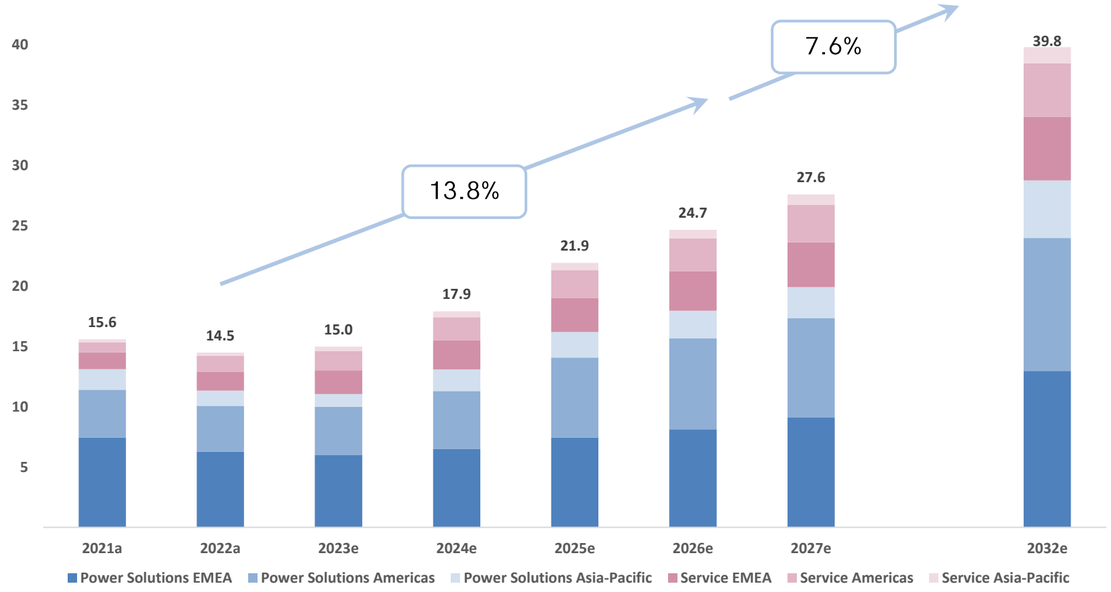
- The wind market is growing with a CAGR of 9.4% over the next decade. Vestas is gaining market share due to the superior technological moat
- The service business sees strong growth over the next decease based on 1) growing installed base and 2) aging wind turbines
- Revenue starts to improve significantly from 2025 due to new offshore platform V236

Margin Recovery Projection until 2027

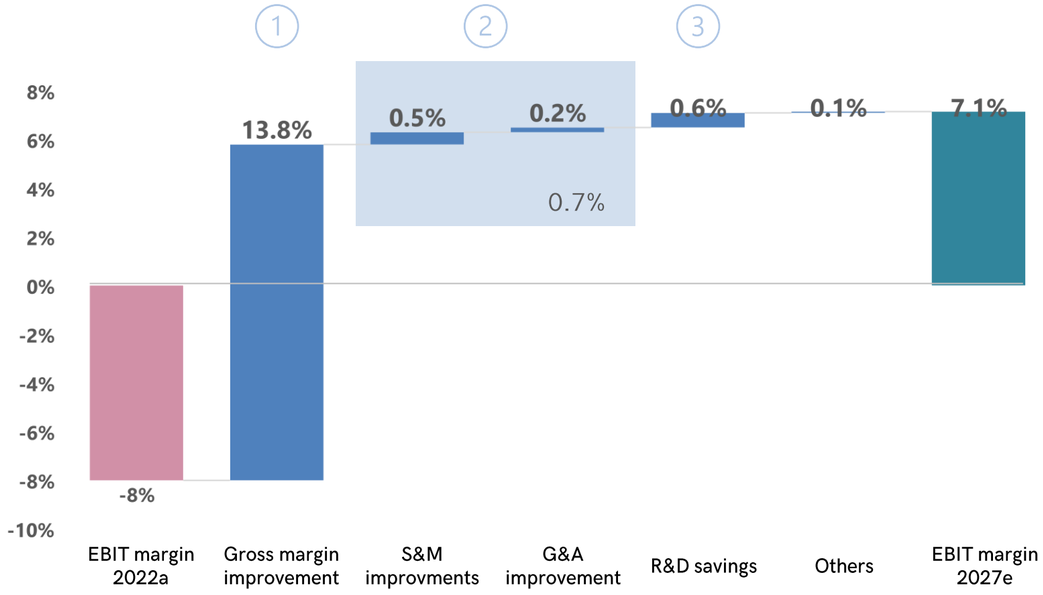
1. Gross margin improves due to 1) pass-through increase in raw material cost to the clients 2) Change in the sales mix to more high-margin service sales, 3) better risk sharing with clients, and 4) increased operating leverage
2. S&M and G&A margins are improving due to operating leverage
3. R&D savings due to 1) a longer version cycle and 2) one platform for offshore and onshore wind turbines

We do not believe that the industry is able to improve the margin to 10% given the Chinese competition.

Revenue projection by Geography and Segment in bn EUR



EBIT margin bridge from 2022a to 2027e



Source: Bloomberg, Team Analysis

Vestas Standalone DCF - Base

Financial Analysis

The implied share price for the DCF in the base scenario is 24 EUR

	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e
Revenue	14,974	17,890	21,913	24,653	27,589	30,690	33,951	34,910	38,089	39,802	41,588
Growth	3.4%	19.5%	22.5%	12.5%	11.9%	11.2%	10.6%	2.8%	9.1%	4.5%	4.5%
EBIT	281	1,029	1,326	1,663	1,944	2,162	2,392	2,459	2,683	2,804	2,930
Taxes	(62)	(226)	(292)	(366)	(428)	(476)	(526)	(541)	(590)	(617)	(645)
NOPAT	219	803	1,035	1,297	1,516	1,686	1,866	1,918	2,093	2,187	2,285
D&A	539	626	767	838	938	1,043	1,154	1,187	1,295	1,353	1,414
CAPEX	(584)	(976)	(1,250)	(1,167)	(1,290)	(1,416)	(1,546)	(1,302)	(1,676)	(1,559)	(1,628)
Change NWC	55	(475)	(899)	(493)	(570)	(648)	(731)	(474)	(445)	(240)	(250)
Unleverd FCF	448	781	687	1,772	2,110	2,352	2,609	3,248	3,359	3,929	4,106
TV											44,630
Discount factor	89.9%	80.9%	72.7%	65.4%	58.8%	52.9%	47.6%	42.8%	38.5%	34.6%	34.6%
PV of free cash flows	403	632	500	1,159	1,241	1,244	1,241	1,389	1,292	1,359	15,438

First Stage	3,934
Second Stage	6,525
TV	15,438
Terminal Growth rate	2%
Enterprise Value	25,896
Total debt	2,427
Cash	205
Equity Value	23,675
Dilluted shares outstanding	995
Implied share price	24

WACC \ Terminal growth rate	3.5%	3.0%	2.5%	2.0%	1.5%	1.0%	0.5%
12.5%	-9.9%	-12.4%	-14.6%	-16.6%	-18.5%	-20.2%	-21.7%
12.0%	-3.9%	-6.7%	-9.3%	-11.7%	-13.8%	-15.7%	-17.5%
11.5%	2.9%	-0.4%	-3.5%	-6.2%	-8.6%	-10.8%	-12.8%
11.0%	10.7%	6.7%	3.2%	0.0%	-2.8%	-5.4%	-7.7%
10.5%	19.6%	14.8%	10.6%	6.9%	3.6%	0.7%	-2.0%
10.0%	29.8%	24.1%	19.1%	14.7%	10.9%	7.4%	4.3%
9.5%	41.8%	34.8%	28.8%	23.6%	19.0%	15.0%	11.4%

Source: Bloomberg, Team Analysis

Conclusion

We derived an Enterprise value of 25.9bn EUR. We deducted total debt and added back excess cash. The Equity value is 23.7bn EUR. Divided the equity value with the diluted shares outstanding and derived a share price of 24 EUR.

WACC & Scenarios

Financial Analysis

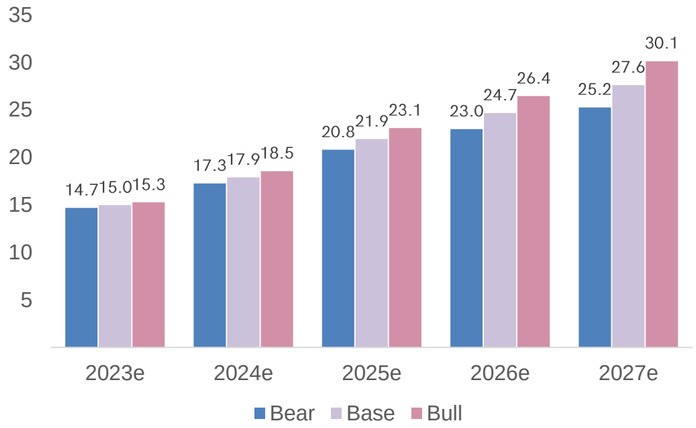
High difference in share price when key assumptions change

WACC Calculations

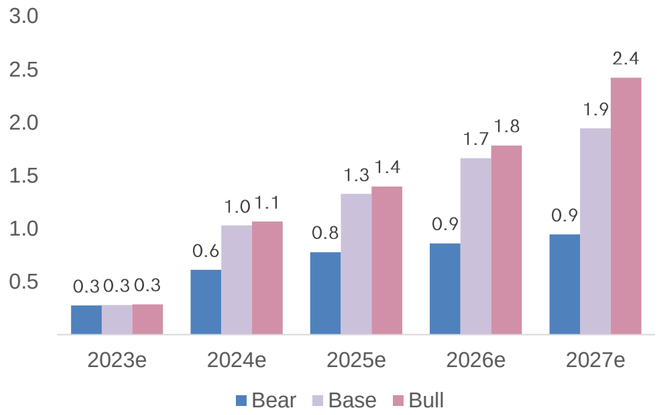
Target Capital Structure	
Debt % of Capital[1]	8,20%
Equity % of Capital[1]	91,80%
Cost of Debt	
Cost of debt[1]	3,24%
Tax rate[1]	22%
After tax cost of debt	3,20%
Cost of Equity	
Equity Risk Premium[1]	8,98%
Beta[1]	1,17
Country/Region Premium[1]	7,66%
Expected Market Return[1]	10,62%
Risk free rate[1]	2,96%
Cost of Equity	11,94%
WACC	11,20%

(1) Bloomberg Finance L.P., VESTAS EQ DK 07/03/2022

Revenue Bear/Base/Bull Case in bn EUR



EBIT Bear/Base/Bull Case in bn EUR



Bear Case Assumptions

- Revenue: 2% lower growth per year compared to the base case due to 1) lower industry growth and 2) lower market share gains
- COGS: Vestas is only partially able to pass on increased raw material prices.
- R&D: Increased R&D spending due to 1) stronger than expected Chinese rivals 2) platform savings from combining offshore and onshore lower than expected

Price per share: 9 EUR

Base Case Assumptions

- Revenue: Wind market is growing 9.5% YoY. Vestas is able to outgrow the market due to superior technology
- COGS: Vestas optimise the risk sharing for the product guaranties and pass on increased costs
- R&D: Reduction of the R&D spending relative to Revenue due to longer product cycle and one platform for offshore and onshore

Price per share: 24 EUR

Bull Case Assumptions

- Revenue: 2% higher growth per year compared to the base case due to 1) a faster increase in renewable energy 2) market share gain due to superior technology
- COGS: The industry gets more disciplined and can increase average selling price

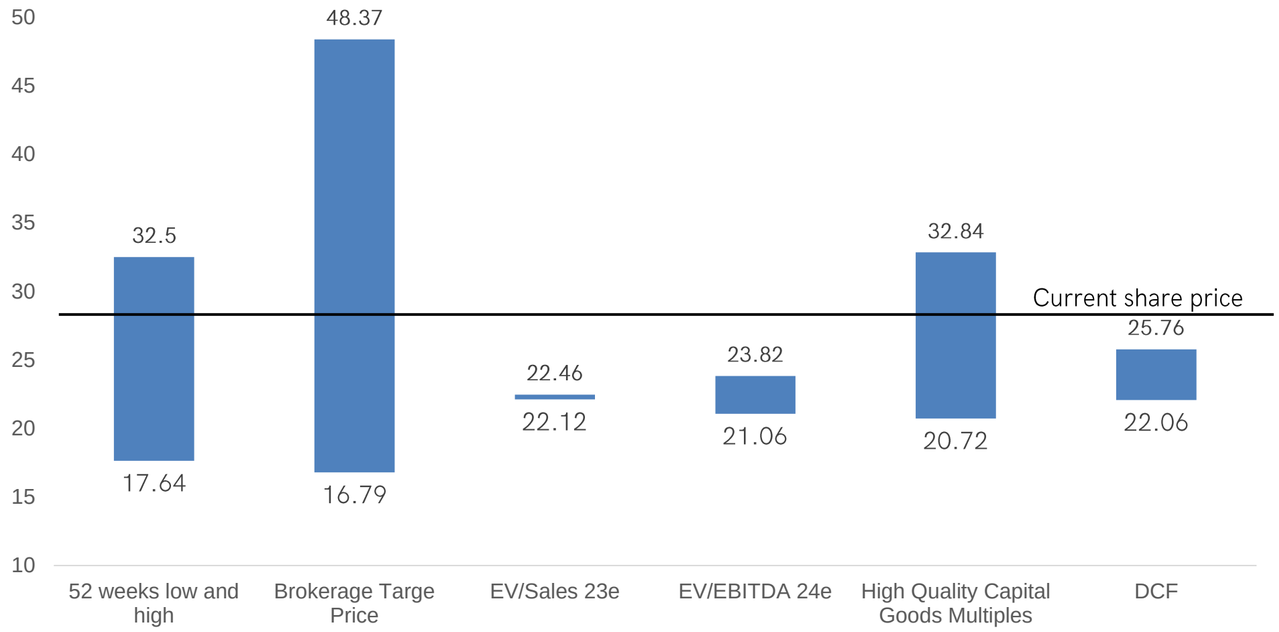
Price per share: 32 EUR

Vestas Standalone Valuation & Equiy Bridge

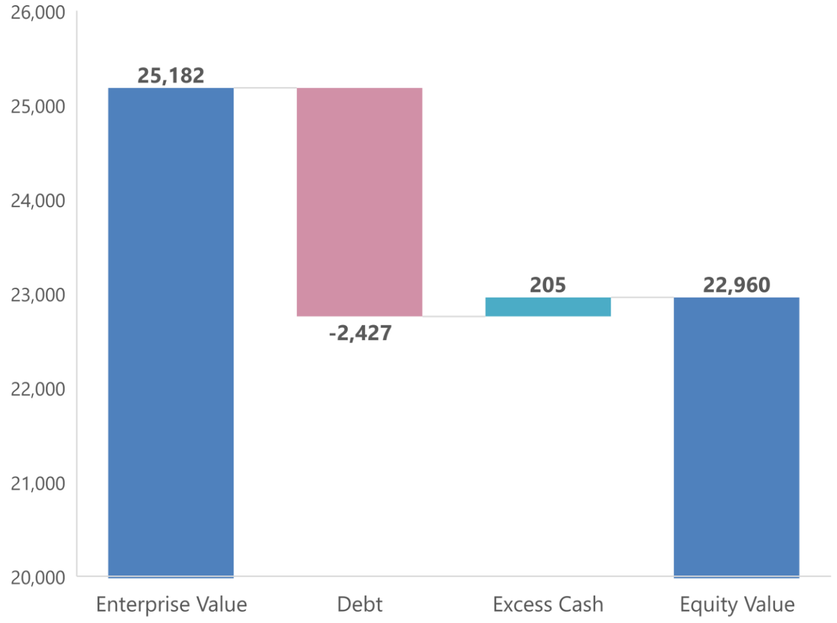
Financial Analysis

The fair price of Vestas is 24 EUR

Football field for Vestas Standalone



Equity Bridge (mn EUR)



Conclusion

The EV/Sales 23e and EV/EBITDA 24e multiple is based on the averages of the Chinese OEMs and Western Solar Equipment Companies. Vestas trades below these comparable companies. Also, the DCF shows a lower valuation.

When Vestas business model shifts faster towards higher-margin, less cycle service business, then a share price up to 32.84 EUR would be justified

Conclusion

We derived an Enterprise value of 25'182mn EUR (based on1/4 EV/Sales 23e, 25% EV EBITDA24e and 50 DCF). We deducted total debt and added back excess cash. The Equity value - 22'960MN EUR. Divided the equity value with the diluted shares outstanding and derived a share price of 24EUR. Thus, the company is currently overvalued.

Source: Bloomberg, Team Analysis

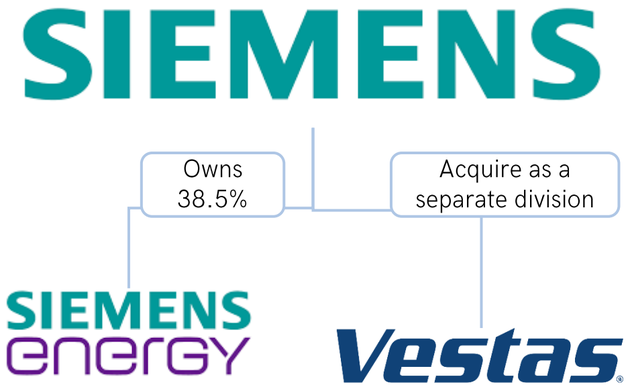
FEASIBILITY ANALYSIS

Siemens

Three different transaction structures

Feasibility Analysis

Strategy A "New Division"



Transaction Description

Siemens fully acquires Vestas and operates as a separate division in addition to the 3 existing divisions. No combination planed with Siemens Energy. Later, Siemens will go forward with the current strategy to sell more shares in Siemens Energy.

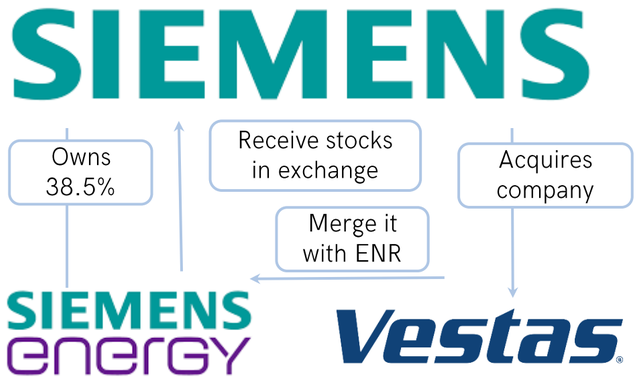
Advantage

Siemens can wait for a better window to sell down its stake in Siemens Energy.

Disadvantages

There are only minor synergies between Vestas and the three division of Siemens.
Competition Regulator could block the deal.

Strategy B "New SVE"



Transaction Description

Siemens fully acquires Vestas and merges Vestas with Siemens Energy. Siemens receives in exchange more shares in Siemens Energy. Siemens has at the end of the deal a larger stake than the current 38.5% in Siemens Energy.

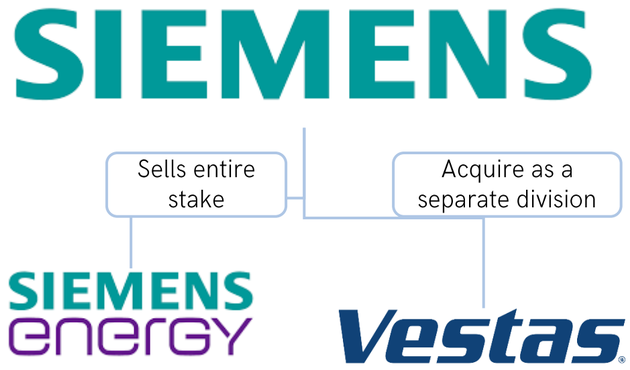
Advantage

Strong synergies between Siemens Energy subsidiary Siemens Gamesa Renewable Energy and Vestas.

Disadvantages

Competition Regulator could block the deal.
Vestas' and Siemens Energy's shareholders have to approve the deal.
Against the current Siemens strategy to divest from the Energy business.
The restructuring of Siemens Gamesa could take longer.

Strategy C "Focus"



Transaction Description

Siemens fully acquires Vestas and operates as a separate division in addition to the 3 existing divisions. The 38.5% stockownership in Siemens Energy will be sold through ABB.

Advantages

Competition Regulator will not block the deal.
Going forward with the strategy to divest from the siemens Energy business

Disadvantages

38.5% can only be sold with a large discount and would increase further pressure on Siemens Energy's stock price. This leads to problems in the upcoming Equity increase to finance the Siemens Gamesa acquisition.

Generated Synergies Overview

Feasibility Analysis

Scenario A+C: Separate division without

	Possible Synergies	Reasoning	Duration	Impact
Sales synergies	• Cross-selling • Siemens Financial Services	• Siemens offers various software and consulting services to the wind industry. There are limited cross-selling possibilities (public tender offers). • Siemens has a separate division which provides financing for customers.	1-3 years	
COGS Synergies	• Combined raw material hedging • Increased bargaining power towards clients	• Vestas has ha significant gross margin problems in the past due to unhedged raw material prices	0-2 years	
SM&GA Synergies	• Reduction of costs associated with the stock listing • Back-office costs	• Vestas has had significant gross margin issues in the past due to unhedged raw material prices • Some back-office activities can be shared	0-2 years	
R&D savings	• Siemens has R&D experience in many fields	• Exchange of ideas and knowhow	2-4 years	

The Synergies between Siemens and Vestas are low because Siemens gives their divisions freedom in choosing their strategy and how they want to operate their business.

Generated Synergies Overview

Scenario B: Combination of Vestas with Siemens Energy

Feasibility Analysis

	Possible Synergies	Reasoning	Duration	Impact
Sales synergies	• Increased revenues by cross-selling products • Offer a broader product range	• Siemens Energy offers HVDC transformers which are used for large wind parks • Siemens Gamesa sales personnel could help selling Vestas' products	0-5 years	
COGS Synergies	• Reduction of material costs • Reduction of shipping and freight costs	• Higher economies of scale between Vestas and Siemens Gamesa • Could use different factories to produce closer to the customer	0-3 years	
SM&GA Synergies	• Reduction of costs associated with the stock listing • Increased barging power towards clients	• Vestas has had significant gross margin problems due to unhedged raw material prices	0-2 years	
R&D savings	• Wind products' improvements • Combined forces for related products	• Future wind turbines could be developed together • Siemens Energy also plans to develop P2X solution	2-4 years	

The Synergies between Siemens Energy and Vestas are generally high because they operate in the same segment. This could be also a catalyst to change the industry with regards to risk sharing to clients. However, there is also the downside risk that revenue is cannibalized because clients put the orders out to tender.

Vestas Synergies DCF – Scenario A+C

Feasibility Analysis

The implied share price for the DCF in the base scenario is 27 EUR

	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e
Revenue	14,974	17,965	22,139	24,908	27,874	31,007	34,302	35,271	38,482	40,213	42,018
Growth	*3.4%*	*20.0%*	*23.2%*	*12.5%*	*11.9%*	*11.2%*	*10.6%*	*2.8%*	*9.1%*	*4.5%*	*4.5%*
EBIT	326	1,123	1,456	1,817	2,124	2,363	2,614	2,688	2,932	3,064	3,202
Taxes	(72)	(247)	(320)	(400)	(467)	(520)	(575)	(591)	(645)	(674)	(704)
NOPAT	254	876	1,136	1,417	1,657	1,843	2,039	2,096	2,287	2,390	2,497
D&A	539	629	775	847	948	1,054	1,166	1,199	1,308	1,367	1,429
CAPEX	(584)	(988)	(1,276)	(1,179)	(1,304)	(1,430)	(1,562)	(1,316)	(1,694)	(1,575)	(1,645)
Change NWC	55	(479)	(915)	(498)	(576)	(655)	(739)	(479)	(450)	(242)	(253)
Unleverd FCF	518	914	856	2,004	2,382	2,655	2,943	3,597	3,739	4,330	4,525
TV											49,188
Discount factor	89.9%	80.9%	72.7%	65.4%	58.8%	52.9%	47.6%	42.8%	38.5%	34.6%	34.6%
PV of free cash flows	466	739	622	1,310	1,401	1,404	1,400	1,539	1,438	1,498	17,014

First Stage	4,539
Second Stage	7,279
TV	17,014
Terminal Growth rate	2%
Enterprise Value	28,832
Total debt	2,427
Cash	205
Equity Value	26,610
Dilluted shares outstanding	995
Implied share price	27

WACC \ Terminal growth rate	3.5%	3.0%	2.5%	2.0%	1.5%	1.0%	0.5%
12.5%	-11.6%	-14.5%	-17.1%	-19.4%	-21.6%	-23.5%	-25.3%
12.0%	-4.5%	-7.9%	-10.9%	-13.6%	-16.1%	-18.3%	-20.4%
11.5%	3.4%	-0.5%	-4.0%	-7.2%	-10.0%	-12.6%	-15.0%
11.0%	12.5%	7.8%	3.7%	0.0%	-3.3%	-6.3%	-9.0%
10.5%	22.8%	17.3%	12.4%	8.1%	4.2%	0.8%	-2.3%
10.0%	34.8%	28.1%	22.3%	17.2%	12.7%	8.7%	5.1%
9.5%	48.7%	40.6%	33.6%	27.6%	22.2%	17.5%	13.3%

Source: Bloomberg, Team Analysis

Conclusion

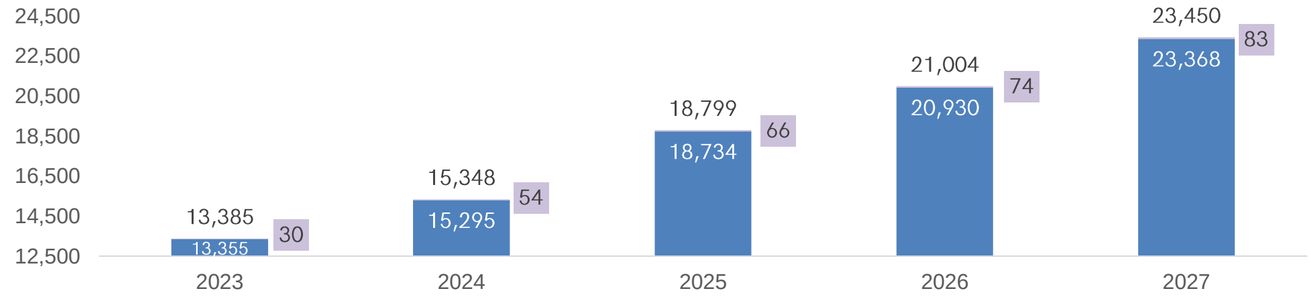
We derived an Enterprise value of 28.8bn EUR. This is almost 3bn EUR more than the standalone valuation. The share price is with 27 EUR 11% higher than in the standalone valuation.

Cost Synergies – Scenario A+B

Scenario B: Combination of Vestas with Siemens Energy

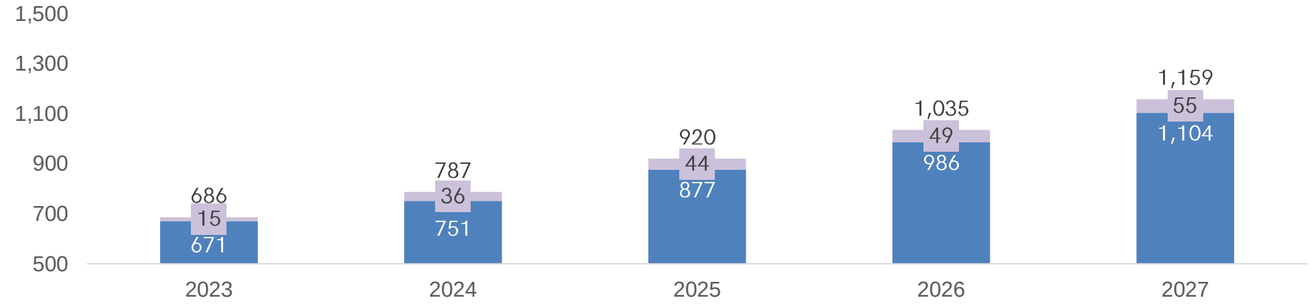
Feasibility Analysis

Synergies from reduction of COGS expenses



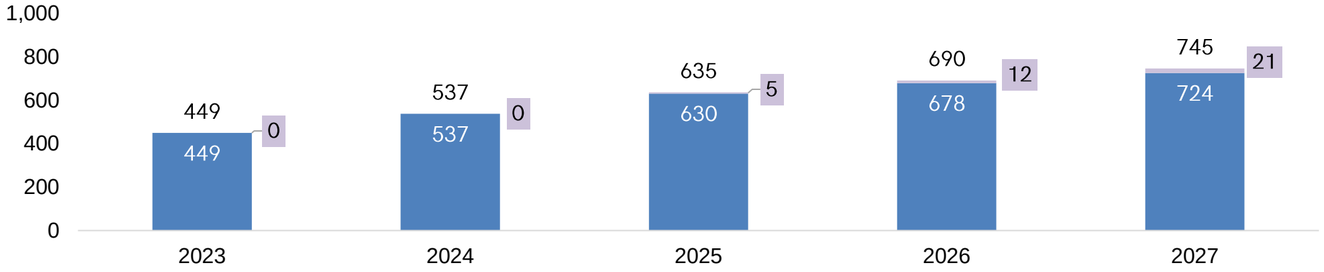
Cost of Goods Sold
As the business is run on a divisional level, there are no significant cost savings. Vestas lacked in the past with hedging the raw material prices. We see that Siemens, with their international experience, better can track changes and hedge them. Furthermore, we see an increased bargaining power for Vestas against Siemens

Synergies from reduction of SM&GA expenses



Sales, Marketing and General Expenses
Vestas does not have the stock listing related expenses and can share several back and mid office activities with Siemens.

Synergies from reduction of R&D expenses



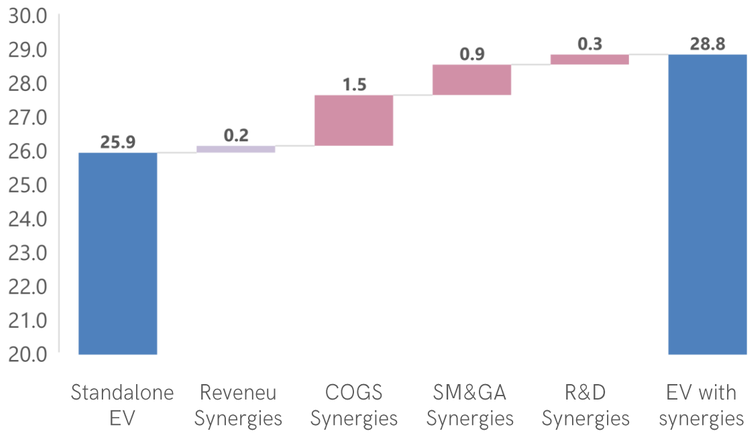
Research and Development Expenses
Vestas can work with the various R&D offices of Siemens together and therefore finds some solution earlier.

Revenue and Bull and Bear– Scenario A+C

Feasibility Analysis

Scenario B: Combination of Vestas with Siemens Energy

Synergies allocation in bn EUR

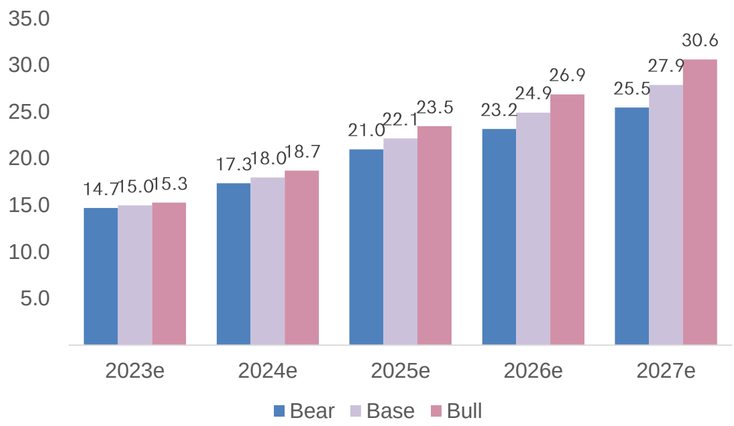


Revenue Synergies

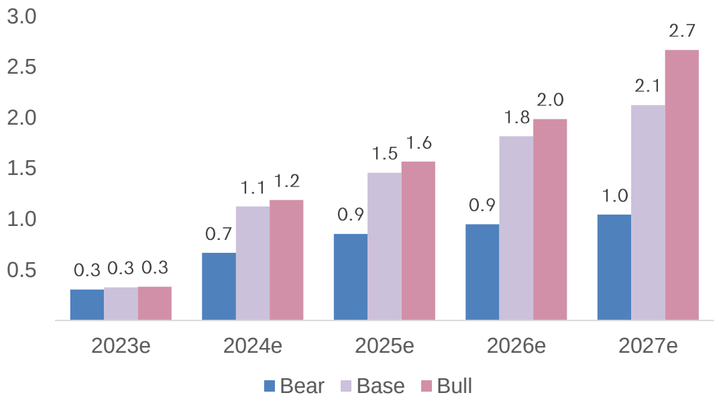
- **Revenue:** We see additional revenue of 850mn EUR over the next 5 years. This is driven by additional sale from the digital solutions network as well as better financial solutions with Siemens Finance

Conclusion
Overall, Siemens is not able to ad significant synergies to Vestas. The largest part is driven by cost synergies.

Revenue Bear/Base/Bull Case in bn EUR



EBIT Bear/Base/Bull Case in bn EUR



Bear Case Assumptions

- Same assumption as in the standalone bear case
- **Revenue:** Cross selling less effective as assumed
- **COGS:** can be reduced only by 20bp
- **SM&GA:** Improvement of only 10bp.
- **R&D:** No difference to the base case

Price per share: 10 EUR

Base Case Assumptions

- Same assumption as in the standalone base case
- Revenue: Additional growth of 50bp in 24e and 80bp in 25e
- COGS: Reduction of 30bp
- SM&GA: Improvement of 20bp until 24e.
- R&D: Improvement of 7.5bp starting from 2026

Price per share: 27 EUR

Bull Case Assumptions

- Same assumption as in the standalone bull case
- Revenue: Additional growth of 1% in 24e and 25e.
- COGS: Improvement of 40bp until 24e.
- SMG&A: Same assumption as in the base case
- R&D: reduction of 10bp starting from 2026.

Price per share: 36 EUR

Vestas Synergies DCF – Scenario B

Feasibility Analysis

The implied share price for the DCF with the merger with SE is 30 EUR

	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e
Revenue	15,047	18,052	22,291	25,302	28,568	31,779	35,156	36,149	39,441	41,215	43,064
Growth	3.9%	20.0%	23.5%	13.5%	12.9%	11.2%	10.6%	2.8%	9.1%	4.5%	4.5%
EBIT	319	1,141	1,520	1,951	2,317	2,578	2,852	2,932	3,199	3,343	3,493
Taxes	(70)	(251)	(334)	(429)	(510)	(567)	(627)	(645)	(704)	(735)	(768)
NOPAT	249	890	1,186	1,522	1,807	2,011	2,224	2,287	2,495	2,608	2,725
D&A	542	632	780	860	971	1,080	1,195	1,229	1,341	1,401	1,464
CAPEX	(595)	(992)	(1,289)	(1,222)	(1,363)	(1,466)	(1,600)	(1,348)	(1,736)	(1,614)	(1,686)
Change NWC	52	(481)	(923)	(524)	(613)	(671)	(757)	(491)	(461)	(249)	(259)
Unleverd FCF	496	938	939	2,158	2,610	2,965	3,286	3,964	4,135	4,754	4,968
TV											54,003
Discount factor	89.9%	80.9%	72.7%	65.4%	58.8%	52.9%	47.6%	42.8%	38.5%	34.6%	34.6%
PV of free cash flows	446	758	683	1,412	1,535	1,568	1,563	1,696	1,590	1,644	18,680

First Stage	4,834
Second Stage	8,061
TV	18,680
Terminal Growth rate	2%
Enterprise Value	31,575
Total debt	2,427
Cash	205
Equity Value	29,353
Dilluted shares outstanding	995
Implied share price	30

	Terminal growth rate						
WACC	3.5%	3.0%	2.5%	2.0%	1.5%	1.0%	0.5%
12.5%	-11.5%	-14.4%	-17.0%	-19.3%	-21.5%	-23.4%	-25.2%
12.0%	-4.5%	-7.9%	-10.9%	-13.6%	-16.0%	-18.3%	-20.3%
11.5%	3.4%	-0.5%	-4.0%	-7.2%	-10.0%	-12.6%	-14.9%
11.0%	12.4%	7.8%	3.7%	0.0%	-3.3%	-6.2%	-8.9%
10.5%	22.7%	17.2%	12.3%	8.0%	4.2%	0.8%	-2.3%
10.0%	34.6%	28.0%	22.2%	17.1%	12.6%	8.6%	5.0%
9.5%	48.5%	40.4%	33.5%	27.4%	22.1%	17.4%	13.2%

Source: Bloomberg, Team Analysis

Conclusion

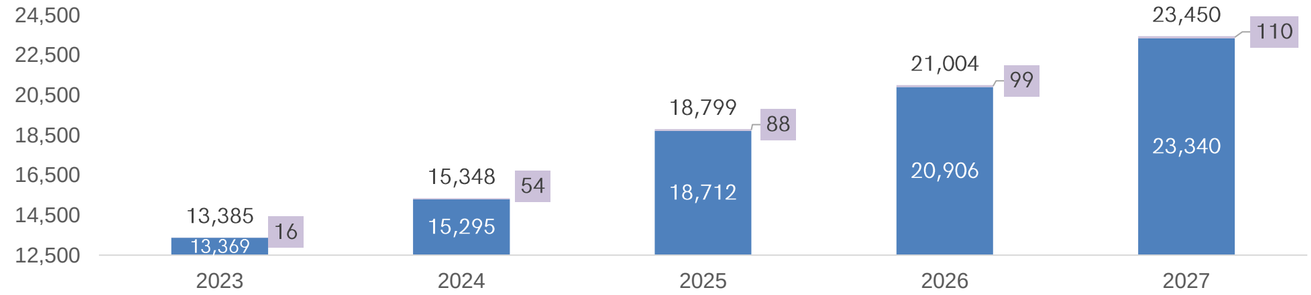
We derived an Enterprise value of 31.6bn EUR. This is around 5.7bn EUR higher than the standalone valuation. The share price is 22% higher than in the standalone valuation.

Cost Synergies – Scenario B

Scenario B: Combination of Vestas with Siemens Energy

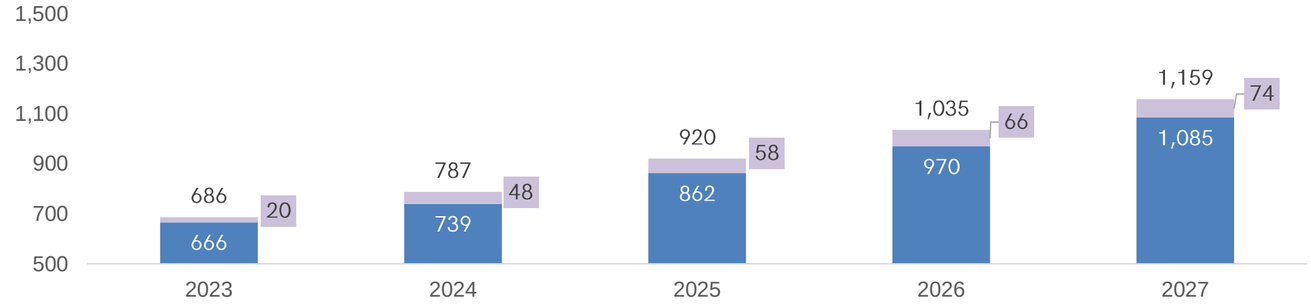
Feasibility Analysis

Synergies from reduction of COGS expenses



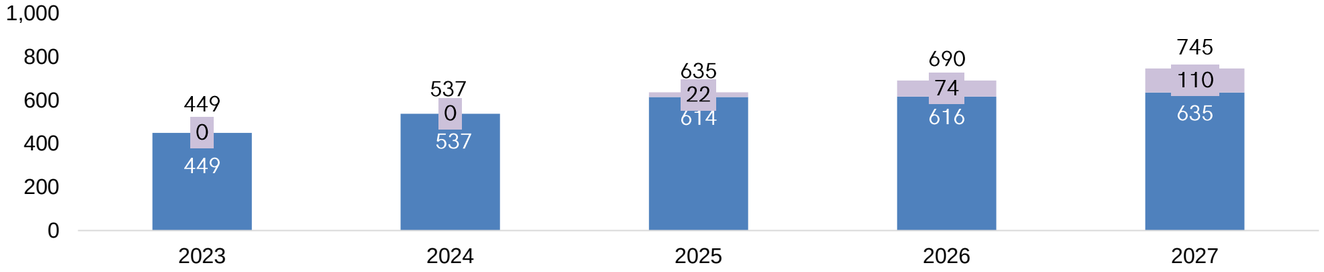
Cost of Goods Sold
Siemens Energy subsidiary Siemens Gamesa Renewable Energy produces similar products and therefore offers economies of scales. For example, the products can be produced closer to clients. Thus, transport costs of the finished products are smaller.

Synergies from reduction of SM&GA expenses



Sales, Marketing and General Expenses
Vestas does not have the stock listening related expenses and can share several back and mid office activities with Siemens Energy. Also, marketing expenses can be reduced.

Synergies from reduction of R&D expenses



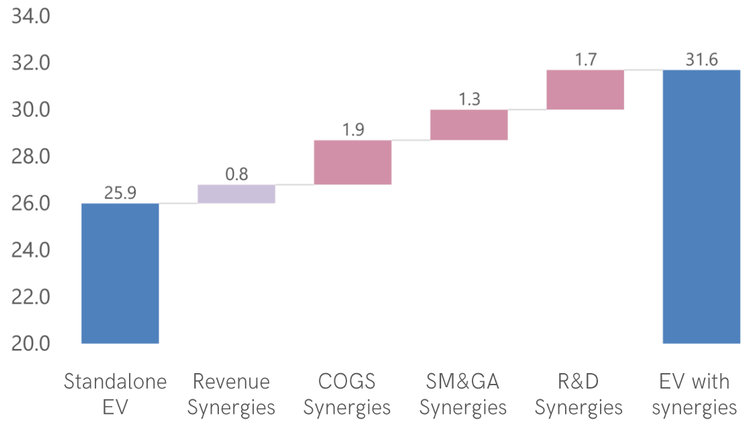
Research and Development Expenses
Vestas can combine their wind turbines platform with Siemens Gamesa Renewable Energy. Therefore, lower R&D expenses in the future.

Revenue and Bull and Bear– Scenario B

Feasibility Analysis

Scenario B: Combination of Vestas with Siemens Energy

Synergies allocation in bn EUR

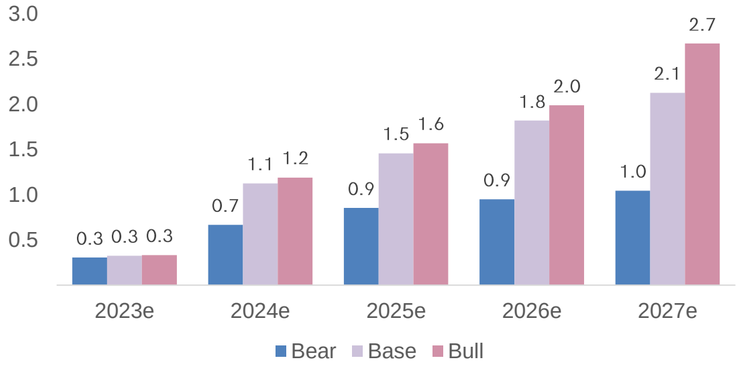


Revenue Synergies

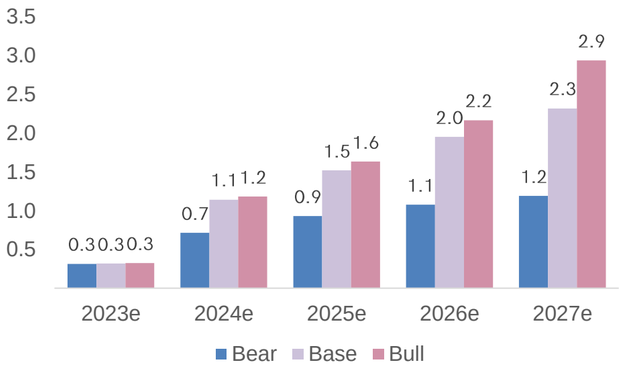
- **Revenue:** We see additional revenue of 2.3bn EUR over the next 5 years. This is driven by cross selling and price increases driven by lower competition in the industry. However, this effect is significantly reduced by revenue cannibalization because customers want different suppliers

Conclusion
There are significant reductions in the cost structure mainly driven by COGS and R&D savings.

Revenue Bear/Base/Bull Case in bn EUR



EBIT Bear/Base/Bull Case in bn EUR



Bear Case Assumptions

- Same assumption as in the standalone bear case

- **Revenue:** Cross selling less effective as assumed
- **COGS:** can reduced only by 20bp
- **SM&GA:** Improvement of only 10bp.
- **R&D:** R&D savings of only 30bp

Price per share: 12 EUR

Base Case Assumptions

- Same assumption as in the standalone base case

- Revenue: Additional growth of 50bp in 24e and 25e and 100bp from 26-27
- COGS: Reduction by 40bp
- SM&GA: Improvement of 30bp
  R&D: Full improvement of 40bp from 2028 onwards

Price per share: 30 EUR

Bull Case Assumptions

- Same assumption as in the standalone bull case

- Revenue: Additional revenue synergies of 50bp from 26 to 27.
- COGS: reduction of 50bp
- SMG&A: reduction of 50bp
- R&D: Additional saving of 50bp until 2028

Price per share: 40 EUR

Acquisition Risks

Anti Trust Regulations are a deal breaker

Feasibility Analysis

	Category	Description of risk	Areas of concern	Threath Assessment	Risk Level Under Scenario A	B	C
Regulation	Anti Trust Regulations	Numerous EU and US acts and policies forbid monopolization	HH I> 2500 indicates the market is close to being a monopoly	The Western market would be highly concentrated post-acquisition, thus, the merger is likely to be stopped			
	Politics	Wind trubine market is strongly exposed to political changes	Unexpected changes in renewable energy subsidy programs	Significant changes in subsidies can lead to changes in demand of wind turbines			
Operations	Oranziation	Differences in company leadership and operational structures	Disturbances in current operations, R&D, IT, supply chain, changes in management structures	Siemens being a services-based company is facing challenging integration with an operations-based company			
	FX Risk	Averse change in exchanges rates	Changes in the exchange rate can lead to a reduction in profit in the income statement or a loss in value of certain balance sheet items.	The risk is very small because Siemens is an international group and can manage such risks well.			
	R&D	Difficulites in R&D can lead to higher costs or to delayed product releases	Aligning the techonolgy and get synergies can be difficult. If merged wiht SGRE than aligning the thechnology gets difficult.	This risk is severe as technology is key in the indurstry and Vestas has some delays due to combining onshore and offshore platforms			
	Legal	Unexpected legal liabilities or disputes, and higher payments from guarantees	The delivered productss have long guarantees on several parts. If the quality is lower then epxected, costs may occur.	Due to merger control regulations, Siemens would be suceptible to litigation in different regions; internal issues might arrise.			
Revenue	Sales	Changes in rights to auction/ tender bidding	One company is allowed to place one bid per tender, thus two firms have higher chances of winning	Acquisiton might result in cannibalization of sales, thus eliminating potential revenues			
	Clients	Acquisition would lead to higher market power with the ability to increase prices	Clients might choose alternative more cost-efficient OEMs	The merger with such market power and inflated costs is likely to increase its prices driving customers away			

Overall Risk Level

Scenarios A and C pose some risks, although not as many and not to the same extreme as scenario B. Therefore, scenario B is advised not to be followed.

Pre- and Post-Acquisition Challenges

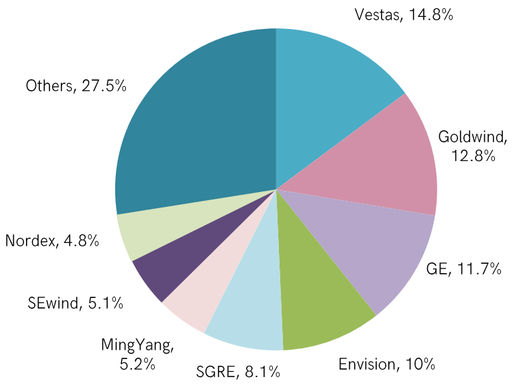
Feasibility Analysis

A deeper analysis of challenges to be faced if Scenario B was followed

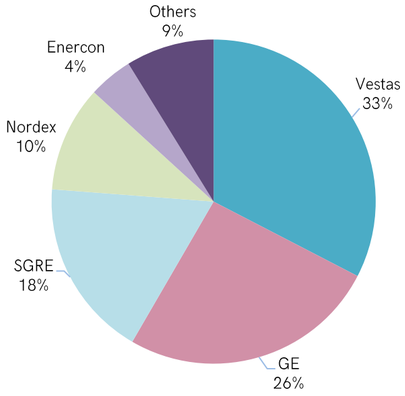
Pre-acquisition Challenge - Anti Trust regulation

Companies with too high market power can increase prices and reduce supply. This leads to wealth loss. Therefore, Governments around the world created antitrust regulations to prevent the development of monopolies: for example, EU Merger Regulation, Sherman Antitrust Act, Hart-Scott Rodino Antitrust Improvement Act, Clayton Act and others.

Global top wind turbine OEMs: market share 2020



Top Western OEMs: market share 2020



According to Hook (2022), the Chinese OEMs are mainly active in China and Western OEMs are mainly active outside of China. Thus, regulators can take them as two different markets. Merging Vestas with SGRE leads to an increase in Herfindahl-Hirschman Index from moderate (2,248) to high (3,474). As a consequence,, the Government would break the deal, or some asset would have to be sold in order not to form a monopoly. Selling assets of the combined company is not possible given the one platform. Various Governments take a stake of more than 10% of market share as problematic. Thus, Siemens would have to sell around 20% of Siemens Energy to solve to problem.

This is a significant reason to walk away from the acquisiton in Strategy A and B!

Post-acquisition Challenges

Revenue

Wind farm developers usually hire OEMs through a public auction/ tender bidding.

A combined company can only offer one product and therefore has a lower chance of winning the contract.

Acquisition might result in cannibalization of sales, thus eliminating potential revenues

Shareholder expectations

Analysis shows that Vestas' revenue tends to be highly volatile, whereas Siemens is moving towards sectors with low revenue volatility. The acquisition might put a switch on the current Siemens strategy, therefore, changing shareholder expectations/ actions.

Synergies

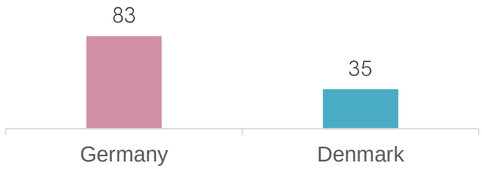
As can be seen from the synergy analysis, under any scenario the savings in costs are relatively low. If it were proceeded to go with the acquisition, Siemens is facing difficulties in achieving those synergies, mainly by having to layoff numerous employees and restructuring the supply chain, as well as management structures.

Cultural differences

Power Distance

Masculinity

Long Term Orientation



Differences in Power Distance and Masculinity scores highlight possible inconsistencies in management structures, as the Danes prefer employee autonomy, while German's work on a top-down structure and prefer authority. As for the Long-Term Orientation scores, Germany tends to be more pragmatic than Denmark, indicating quicker adaptability to changes.

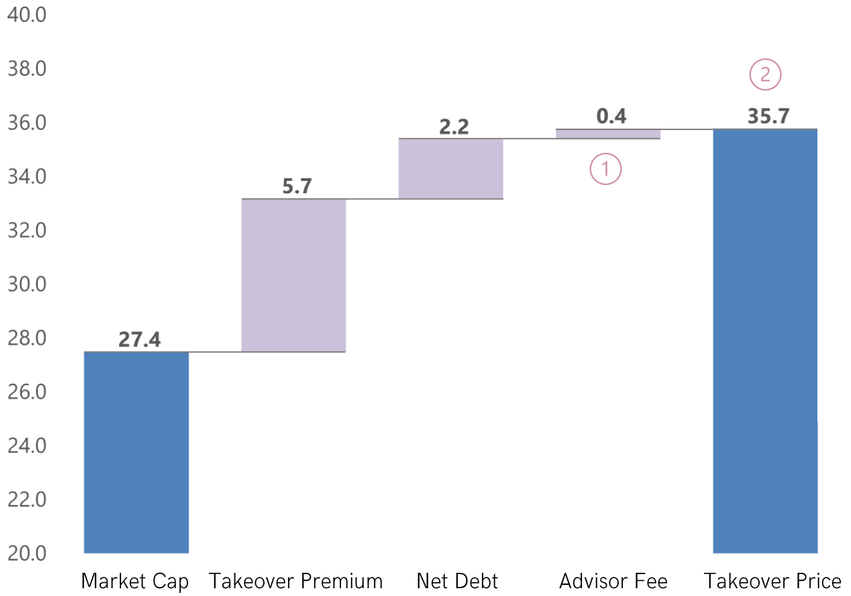
Sources: (Jemison and Sitkin, 2014); (Gavin, 2019); (Wood Mackenzie, 2021); (Hook, 2022); (EUR-Lex, no date); (Hofstede Insights, no date)

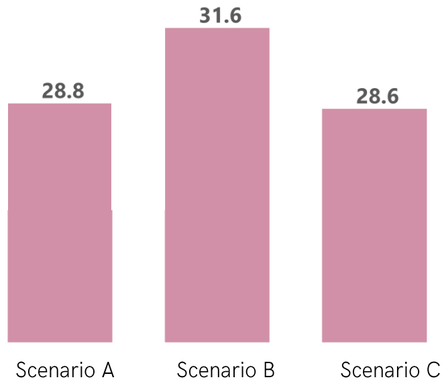
Sources & Uses to Finance the Transaction

Feasibility Analysis

Synergies due not justified Vestas acquisitions and Siemens is financial limited

The purchase price for Vestas is significantly higher than synergies justify (all values in bn EUR)





Different Scenarios

- Scenario A: The enterprise value is 19.3% lower than the estimated takeover price. Thus an acquisition would destroy value
- Scenario B: The synergies are higher in this scenario, but still below the takeover price (11.5%)
- Scenario C: The enterprise value is 19.9% lower than the takeover price. Compared to scenario A, Siemens would have to sell their Siemens Energy stake through an accelerated block building procedure. This leads to a discount on the current price and adds additional fees to the bank. We estimate the cost 5% of the Market Value of their Siemens Energy stocks (around 200mn EUR)

Acquisition premium

- We found a bid premium of 21% on the share price one day before announcement
- The analysis is based on a similar industrial transactions in Europe and USA above 1bn USD in the past three years.

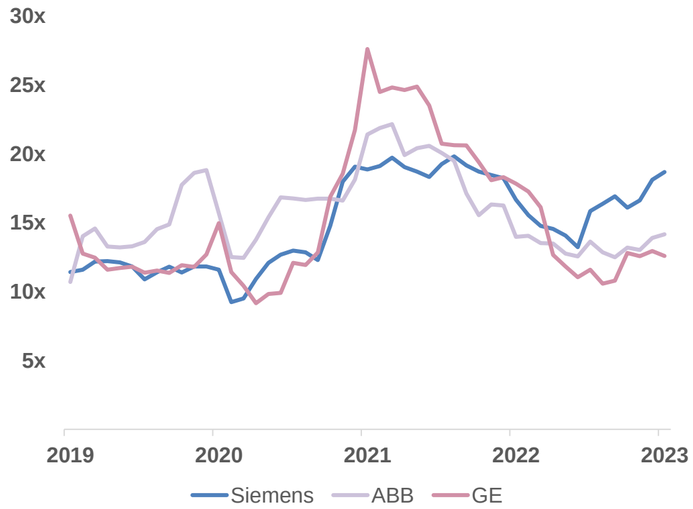
Comments on the graph

① The advisor fee is 1% of the complete transaction value.
② The takeover prices compromise the current market cap, a 21% premium for taking control, the net debt, and the advisor fee.

Siemens financial power

- Siemens has a net debt/EBITDA ratio of 3.2 which is significantly higher than ABB's 0.8x or GE's 1.4 times. Thus the company cannot issue a significant amount of debt.
- Siemens has currently a higher multiple compared to its competitors, therefore the company can issue equity with lower dilution.
- Siemens could sell a part of the listed Siemens Energy or Siemens Healthineers stake (currently valued at 48.5bn EUR)

EV/EBITDA LTM



Sources: (Bloomberg, 2023), (Merger Market, 2023), (Capital IQ, 2023)

ALTERNATIVES

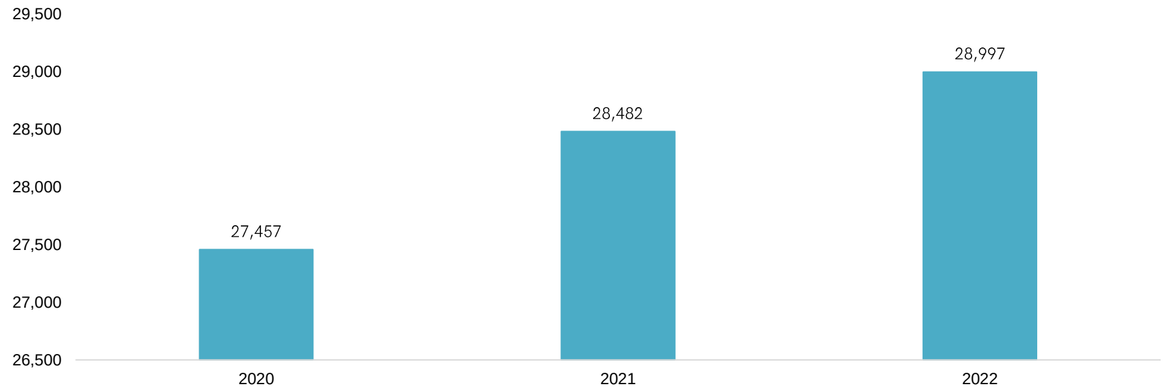
Alternative Targets

Alternatives

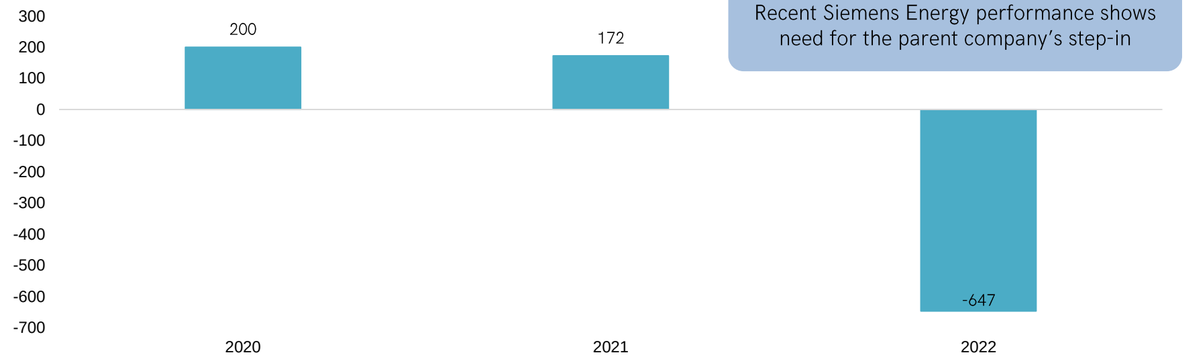
Perhaps the acquisition target is just around the corner?

General benefits of Siemens acquiring Siemens Energy	Changes in landscape suggesting more concentrated control is needed
Efficiency and cost savings Owning a larger share or fully would increase Siemens' financial exposure to the energy industry	Due to EU sanctions on Russia, Siemens Energy had to seize its operations in Russia, resulting in 600 EUR million loss
Synergies in Mobility Siemens Energy's products would highly complement Siemens efforts in decarbonizing the mobility segments	Due to supply chain disturbances and growing material costs, numerous contracts signed by Siemens Gamesa might turn out to be unprofitable
Synergies in Infrastructure Siemens Energy's services and expertise would highly complement Siemens in its infrastructure and consulting services	In Fall 2022, Russia suspended Nord Stream gas pipeline which was maintained by Siemens Energy, causing losses for the company
Financial control With Siemens Energy's fluctuating historical financial performance, Siemens would have more control and could improve company's profitability	Siemens announced in Spring 2023 it is spinning out its motors and drives businesses creating more space to focus on energy

Siemens Energy Revenue(mn EUR)



Siemens Energy Net Income(mn EUR)



Recent Siemens Energy performance shows need for the parent company's step-in

With acquiring Siemens Energy, Siemens would not be susceptible to concentrating the wind market, therefore, avoiding regulatory concerns

Siemens, with its past and current expertise in Siemens Energy operations and financials would not be facing the same risks as with merging with Vestas

The capital markets do not reflect the real value of Siemens Energy concluding it is undervalued, which makes it more attractive to fully invest in

Sources: (Siemens Energy, 2021; no date b); (Hook, 2022); (interfax, 2022); (Seddon and Sheppard, 2022); (Aizarani, 2023d); (Agence France-Presse - AFP, 2022); (Reuters, 2023)

Alternative Targets

Alternatives

Other acquisitions might complement current Siemens strategy better

Overview of Siemens business segments medium-term needs

Smart Infrastructure (SI)

SI in terms of financials is doing well, although with the goal of creating sustainable infrastructure, and growing competition, Siemens might be in need for more environment-friendly solutions.

Healthineers

Although the segment is generating 32% of Siemens revenue, it is still lagging behind the biggest competitors in the industry. Further expansion might be needed, together with more diagnostics innovations.

Mobility

Only 14% of revenue is generated by the segment – further expansion needed. Profit margin of 8.2% shows there is space for better Mobility solutions to drive the margin upwards.

Digital Industries (DI)

M&A portfolio of Siemens has been largely focused on expanding DI's offers. 29% of revenue coming from DI, together with a profit margin of 19.9% show no need for mid-term expansion.

Alternative companies to better equip Siemens current needs

Target Area	Company	Description	Performance	Benefits	Drawbacks	Strategic fit
Smart Infrastructure	Landis+Gyr	Swiss- based Metering infrastructure Smart grid tech Electric, gas meters Load management software Load management Consulting **Operates in:**	**Net Revenue:** 1,464mn USD (FY21) **Adjusted EBITDA:** 147mn USD(FY21) **EPS:** 2.59 USD **Most profitable region:** Americas (48%) **Utilities served:** 3,500+ **Connected Intelligent Devices:** 137+ million **Reads/day:** 1.3 billion **Rankings:** #1 Global AMI Company of the Year 2022 by Frost & Sullivan Climate Leaders by Financial Times and Statista in 2021	High focus on renewable energy Smart Metering solutions helped to avoid 9.05 Mt of CO2 emissions in 2021 High focus on R&D: 160 mn USD in 2021	Likely regulatory suspicions in pre-acquisition stage due to high market share Likely cultural clashes in management	1. Customer base increases 2. Access to smart grid innovations 3. Reduction of emissions 4. Renewable energy industry 5. Combination with the low voltage business Overall Fit

Sources: (Landis+Gyr, 2022; no date a; no date b); (Siemens, 2023a); (Bloomberg, no date)

Alternative Targets

Alternatives

Alternative companies to better equip Siemens current needs II

Target Area	Company	Description	Performance	Benefits	Drawbacks	Strategic fit
Smart Infrastructure	ENPHASE.	US-based Solar generation management Storage Communication solutions **Operates in:**	**Net Revenue:** 1,382mn USD (FY21) **EBITDA:** 248mn USD (FY21) **EPS:** 1.09 USD **Most profitable region:** The US (80%) **Systems deployed:** 1.9mn **Microinverters shipped:** 42+ M **Microinverter shipments:** 43.4 Twh	✓ Large US customer base ✓ Involved with US decarbonizing policies ✓ Green Financing Framework established	✗ Dependent on third-party manufacturers, suppliers, etc. ✗ Dependent on seasonality ✗ Operates in high-competition environment ✗ Is largely dependent on several major customers	1. Fits into Siemens' eclectric charging and Low Voltage Grid business 2. Renewable energy industry Overall Fit
Healthineers	illumina	US-based Leading developer, manufacturer, marketer of array-based tools and systems Focused on genetic analysis	**Net Revenue:** 4,584mn USD (FY22) **EBITDA:** -3,758mn USD (FY22) **Most profitable region:** Americas (53%) **Cumulative sequencing installed base:** >20,000	✓ Competent in disease research, drug and molecular tests development ✓ Present in 150 countries ✓ Invested 885mn USD into R&D, holds >8,450 patents	✗ Is preparing for product launch which is eating up its finances. Performance is hard to predict ✗ High dependence on third-party suppliers ✗ Is ongoing legal proceedings due to acquisition of GRAIL and current negative EBITDA	1. Precision medicine portfolio expansion 2. New diagnostic tools development 3. Access to research and clinical markets Overall Fit

Sources: (Enphase Energy, 2022a; 2022b); (Illumina, 2022a; 2022b; no date); (Finance! Yahoo, no date); (PitchBook, no date); (Macrotrends, no date b; no date d)

Alternative Targets

Alternatives

Alternative companies to better equip Siemens current needs III

Target Area	Company	Description	Performance	Benefits	Drawbacks	Strategic fit
Mobility	CAF	Spain-based Trains Transport systems Rail solutions Rail equipment Components Electric and hydrogen buses Electrification System operation	Net Revenue: 3,165 EURM (FY21) EBITDA: 232 EURM (FY21) EPS: 1.52 EUR Most profitable region: Europe (66%) Order intake majority from: rolling stock (58%) Rankings: EcoVadis: 75 CDP: B	65% new contracts from recurring customers Sustainable mobility – 50% and 13% of awarded vehicles were electric buses and trolleybuses, respectively 86% of buses are zero-emission	Small presence in Americas and APAC Severely struck by supply chain disruptions due to Russia-Ukraine war Exposed to Spain's microclimate where strikes are increasing	1. Consolidation of the rail equipment industry 2. Sustainable products 3. Mobility innovations Overall Fit
Mobility	Talgo	Spain-based Design and manufacturing of high and very-high speed trains; long distance and regional locomotives Manufacturing and maintenance of equipment, etc.	Net Revenue: 555.4 EURM (FY21) EBITDA: 66.2 EURM (FY21) EPS: 0.22 EUR Most profitable business unit: Maintenance services (69%)	Continuous development of minimum energy consumption rail solutions High competence in lightweight and energy-efficient trains Launched a hydrogen train in 2021	Highly dependent on governmental contracts; Highly dependent on third-party suppliers and manufacturers; Exposed to Spain's microclimate where strikes are increasing.	1. Consolidation of the rail equipment industry 2. Access to patented developments (Pendular technology) 3. Complementing portfolio 4. Supply chain synergies Overall Fit

Sources: (CAF, 2023a; 2023b; no date); (Talgo, no date a; no date b)

CONCLUSION

Conclusion

Siemens is advised AGAINST acquiring Vestas

Arguments to support the concluding advise to not acquire Vestas

Siemens and Vestas strategic fit

Siemens' current strategy to divest from the low-margin energy business and focus more on its digitalization and automation capabilities with higher margins does not go in line with the notion of acquiring Vestas. The strategy was so far a good decision: GE announced similar plans recently, and ABB also divested/spun out or carved out various businesses (under pressure from Cevian).

Siemens and Vestas serve different markets and work under different business models: Siemens – a service-based company, whereas Vestas is an operations-based company. Challenges with the supply chain, management, customers, R&D and internal systems are prone to arise.

Vestas financial valuation

Vestas' current EBIT margin is below 0% like other western OEMs (SGRE and GE). The whole industry expects to increase the margin towards 10%. However, due to the biting mechanism, it is extremely difficult to increase the prices. Also, more Chinese OEMs are expected to catch up with the technology thanks to their protected home market.

With a conservative view, Vestas is currently valued over the fair market price and the synergies are not high enough. However, if market conditions change and once Vestas can sell higher margin services, a multiple expansion could be seen justifying the acquisition.

Synergies and feasibility

Strategy A "New Division"

Siemens would own Vestas and have more than 10% ownership in SGRE.

Deal not supported due to antitrust issues

No Deal!

Strategy B "New SVE"

SGRE and Vestas would be merged and thus very consolidate the market

Deal not supported due to antitrust issues

No Deal!

Strategy C "Focus"

Siemens sells interest in Siemens Energy and acquires Vestas fully

Synergies < acquisition price; occurred losses on Siemens Energy

No Deal!

More suitable alternatives

Fully acquiring back or owning a larger share of Siemens Energy is advised due to already high Siemens holdings in it. Such acquisition is beneficial for Siemens due to higher possible synergies and better financial and operational control. This alternative does not pose regulatory concerns as in other cases.

Acquiring other companies more synergetic with current Siemens business lines is also advisable. To be able to reach optimum growth in the mobility segment, Siemens could acquire Targo, in Smart Infrastructure – Landis+Gyr, in Healthineers – Illumina. A more in-depth analysis is recommended.

Sources: (Bloomberg, 2022)

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