NON-CENTS CAPITAL

TEAM NON-CENTS CAPITAL

Aayush Grover | Aryamman Jani | Bhavya Sood | Manvi Bhatt | Shivam Agarwal
Shaheed Sukhdev College Of Business Studies, University Of Delhi, India

RENEWED EMPHASIS ON POWERING A BRIGHTER FUTURE

SIEMENS AG

Table of Contents

SIEMENS

Should SIEMENS acquire VESTAS?

Criteria	Siemens should **NOT** acquire **Vestas**	Siemens should acquire **SolarEdge**
	Vestas	solaredge
Strategic Fit	X **Fails** to address **priority areas.** X Leads to **doubling down** in a domain which the company has **attempted to spin off**.	✓ SolarEdge's **product portfolio and operational business** segments **complement** Siemens' business. ✓ Is in a domain which Siemens has tried to strengthen in the past
Valuation & Cost	X The market currently overvalues Vestas by approx. **8%.** The renewable sector's **premium rate of acquisition overweighs the synergies (EUR 5.5bn)** generated due to this acquisition	✓ The market currently **undervalues SolarEdge by approx. 19.5%. The company seems cheap despite the premium.**
Deal Feasibility	X The acquisition would necessitate **a substantial amount of debt (min. EUR 25bn)**, which will lead to value destruction X It highly concentrates the European Market (approx. 3600 HHI) and US Market (approx. 7600 HHI), hence will come under regulatory scrutiny	✓ Current market landscape shows no regulatory impediment risk that could threaten the closure of the deal. The acquisition is in a non-overlapping segment
Impact	X The acquisition would lead to an **average EPS dilution of 4% for the next 10 years**	✓ The acquisition will lead to an **average EPS accretion of 7.04% for the next 10 years**

SIEMENS

THE COMPANY: SIEMENS

I

Present in **Diverse** Industries, Siemens has **grown consistently** but faces margin pressure and relies a lot on key markets. It has made **sustainability a core concern &** has never been afraid to acquire companies in new domains.

However given its **minimal stake in Wind Energy** through its portfolio companies, is it prudent for them to acquire Vestas or should they look elsewhere to make a higher impact?

OVERVIEW OF SIEMENS : Creating technology to transform the everyday

SIEMENS

Present in diverse industries, Siemens has grown consistently but faces margin pressure and relies a lot on key markets

*Overview of **Siemens: Key Takeaways***

- Founded in 1847 in Germany, and is now headquartered in Munich.
- A multinational technology company focused on **industry, infrastructure, transport, and healthcare.** Diversification provides them resilience against economic downturn
- Present in all continents; however, their **presence in APAC and America's is minimal when we exclude China and USA**.
- In fiscal 2022, generated revenue of €72.0 billion and a net income of €3.72 billion. The **3-year revenue CAGR is 7.2%** Margins have slightly declined during the period.
- Slightly outperformed the Index and has been stable during downturns as well.

*Siemens is a **multinational company** with **very varied operations…***

INDUSTRIAL BUSINESS

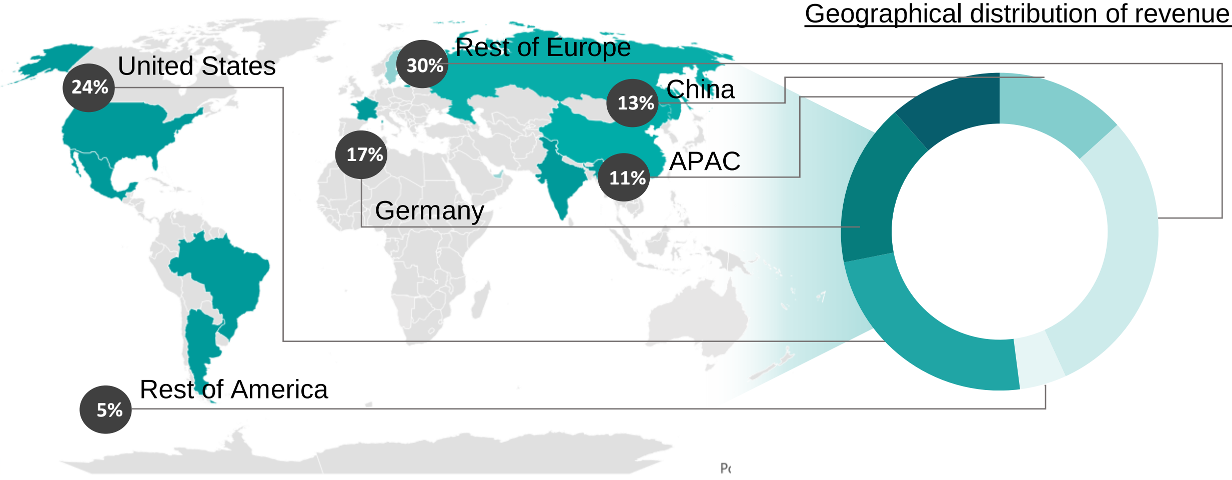
Digital Industries | Smart Infrastructure | Mobility | Siemens Healthineers | Portfolio Companies | Siemens Advanta

SERVICES

Financial Services | Siemens Real-estate | Global Business Services

*It is present across **5 continents** but **China, Germany and USA** remain key markets...*

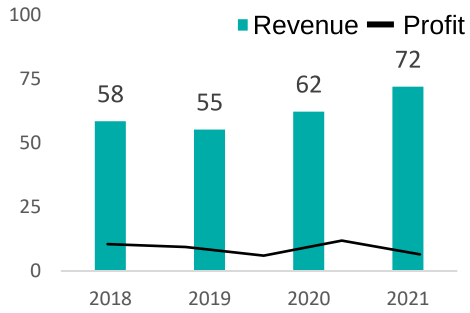
Geographical distribution of revenue (%)



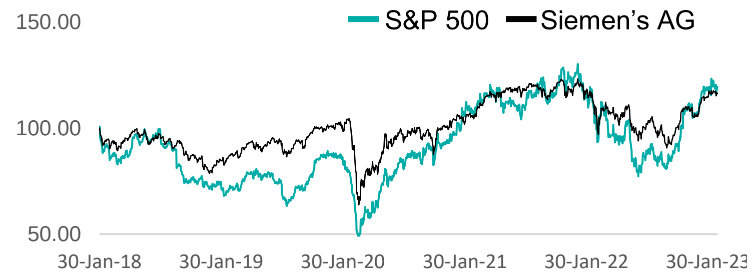
- Revenue related to external customers of USA and home market of Germany, rose in all four industrial businesses year-over-year, while China is strongly driving the emerging markets

*Revenues have **grown consistently** but **margins have slightly fallen…***

Revenue and Profit (In € Bn)



Relative Performance of Share Price (In €)



SOURCES: Annual report, Company Website

HISTORY AND FUTURE OUTLOOK : Diversify, Disrupt and Develop

SIEMENS

Started as an electrical engineering company, Siemens has always dared to enter new segments. Now it focuses on sustainability

SUSTAINABILITY
2020 FORWARD
New technologies for sustainable mobility and energy management; committed to achieving carbon neutrality by 2030.

SIEMENS Gamesa RENEWABLE ENERGY

INNOVATION AND TECHNOLOGY
2010-2020
Established itself as a leader in renewable energy, with a particular focus on wind power

SIEMENS energy

FOCUSED EXPANSION
2000 - 2010
Became a major player in medical technology & expanded in the energy sector

RESTRUCTURING PROCESS
1990-2000
Expanded into telecommunications & information technology sectors

SIEMENS Ingenuity for life

POST WAR RECONSTRUCTION
1945-1990
Entered nuclear power, healthcare and transportation.

SIEMENS Healthineers

DIVERSIFICATION
1880-1900
Entered the field of electrical power generation and transmission, and expanded internationally

GLOBAL EXPANSION
1900-1945
Entered the field of telecommunications, developing new technologies such as radio and television broadcasting.

SIEMENS Siemens Enterprise Communications

SIEMENS & HALSKE
1847-1880
Founded as an electrical engineering firm that specialized in telegraph.

Key target moving forward

15-20% Capital Efficiency ROCE

5-7% Revenue Comparable Growth

SOURCES: Team Analysis, Annual report, Company Website

SEGMENTS AND INVESTMENTS

SIEMENS

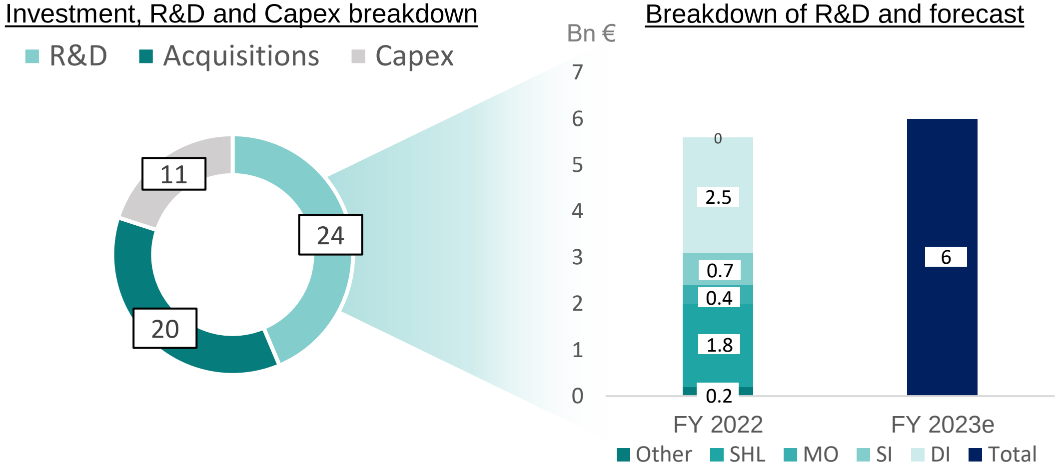
Siemens looks to acquire companies that empower multiple domains, and it has been investing heavily in R&D

***Segmental breakdown** shows **DI and Healthineers** have been **performing well**…*

Parameter	DIGITAL INDUSTRIES	SMART INFRASTRUCTURE	MOBILITY	SIEMENS HEALTHINEERS
Revenue	19.5 bn	17.4 bn	9.7 bn	21.7 bn
Growth Rate	+13%	+10%	+3%	+6%
Profit Margin	19.9%	12.8%	8.2%	15.5%
Employees	76.2K	72.7K	38.2K	69.5K

Note: A detailed analysis of the various segments and their performance will follow

*They are continuously **innovating and expanding** through **focused investments**…*



*Siemens is also present in **energy business** via stake in **Siemens Energy***

SIEMENS energy

- Formed in September 2020
- Spin off of the energy division of Siemens AG
- Publicly traded company in the Frankfurt Stock Exchange
- 35.1% stake owned by Siemens AG

Company Structure

Gas Services | Grid Technologies | Industry Transformation | SGRE | Reconciliation

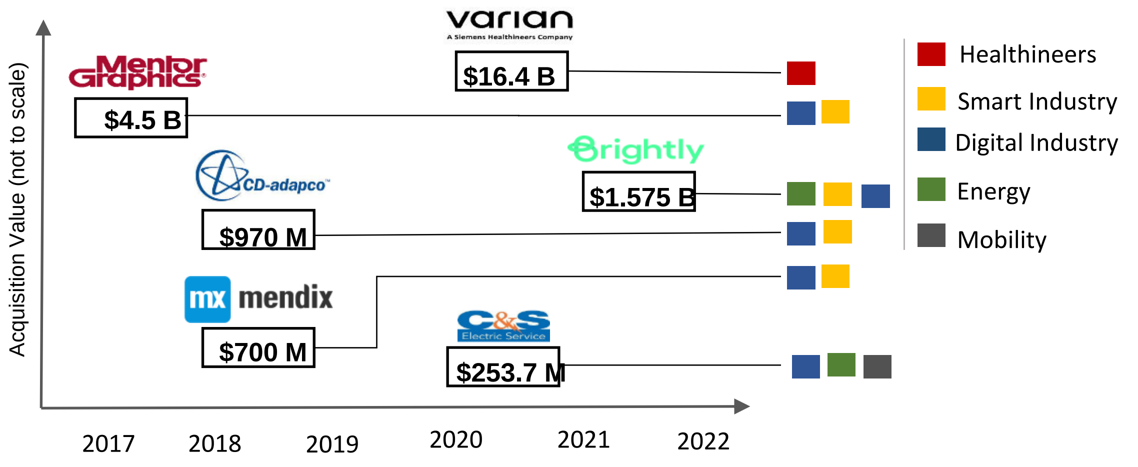
…which in turn is in the wind turbine business by holding a majority stake in Siemens Gamesa

SIEMENS Gamesa

- Formed in January, 1976
- Wind engineering company, offshore & onshore wind services
- 97.79% stake owned by Siemens Energy

...Gamesa is a leader in the renewable energy industry working to provide the world's best offshore and onshore wind turbines and services

*…with each investment impacting **multiple segments of Siemens AG***



SOURCES: Team Analysis, Annual report

FINDING STRATEGIC PRIORITIES II

In order to make the **maximum impact** in terms of **Value Creation and ESG**, it is **imperative** that we **understand all segments** that Siemens operates in and find areas where we can make a **sustainable difference**

INDUSTRY

What are the market trends in each segment that Siemens operates in?

Where is the potential growth ?

COMPANY

What is the competitive position of the company in each segment – are they ready to capitalize on trends, or are they lagging behind?

What weaknesses need to be addressed ?

INDUSTRY

What are the market trends in each segment that Siemens operates in?

Where is the potential growth ?

INDUSTRY OVERVIEW

APAC is a key market for **Smart Infrastructure and Digital Industry**. In DI, companies must start preparing automation solutions for diverse industries. **Investing in Electrification, Energy Management Systems, inverters and automation** is becoming critical. **In mobility, sustainability has taken hold,** and different geographies require different services. In Healthineers, diagnostic and imaging are expected to grow the fastest.

MACROTRENDS AND THEIR IMPACT

We cannot discount the impact the Geopolitical Situation will have – The Russia Ukraine Crisis has accelerated the switch to renewables, impacting Power Generation, Distribution, and Storage. In the Power generation segment, Solar is expected to grow the most, while Grid and Distribution now require more investment than wind to reach Climate Goals.

The Chinese Hegemony on Renewables also poses a risk, and any acquisition should consider this. This risk is minimal with Energy Management Systems, inverters, and batteries.

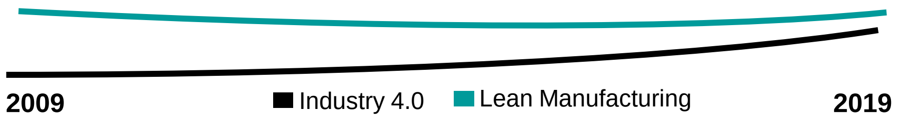
INDUSTRY (1/9): Digital Industry

SIEMENS

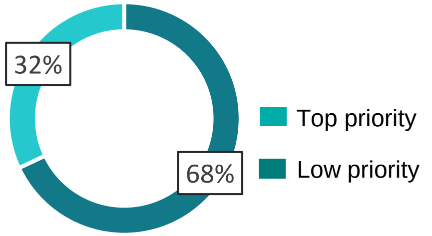
Growth in APAC driven by industrial software; in Europe by process automation and in discrete automation by new industries

*Despite being a strategical imperative, **Industry 4.0 (Digital Industry)** is lagging behind in **implementation***

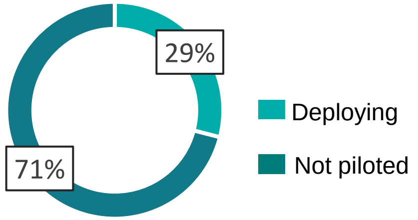
Industry 4.0 is becoming the new buzz word and is as important as lean manufacturing



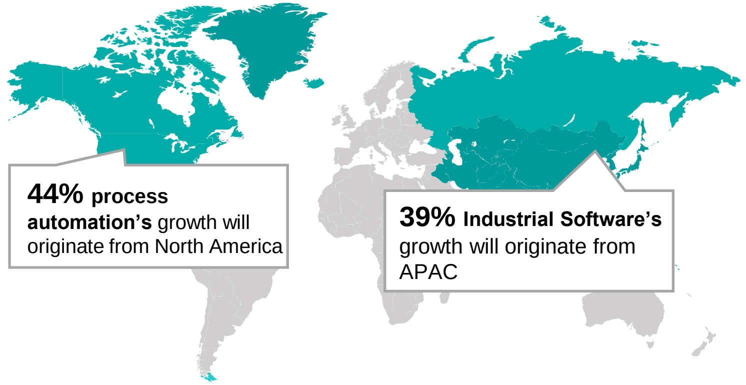
CEOS give high priority to Digital Industry…..



…yet 71% have not deployed them

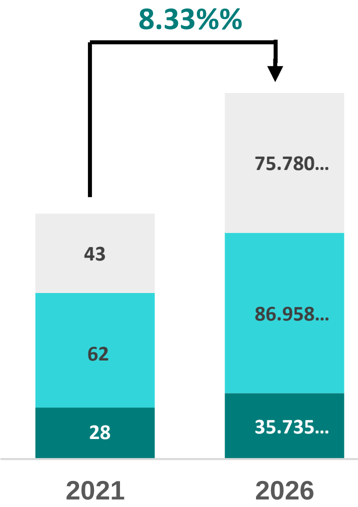


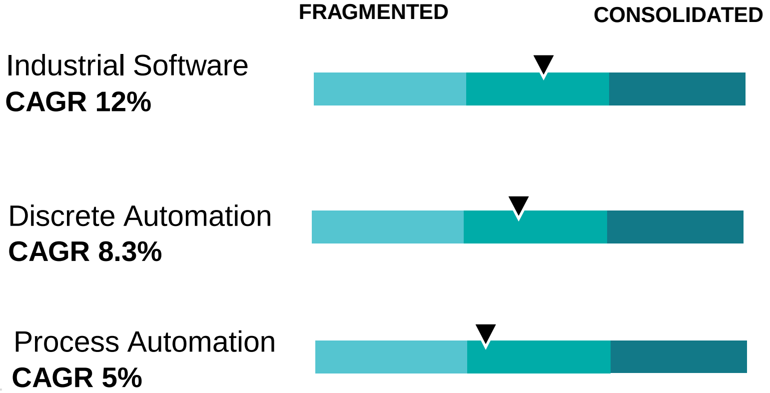
***APAC** to grow the **fastest** however with differential **growth rates**…*



- ✓ Process automation - *automation of continuous processes*
- ✓ Discrete automation - *automation of discrete or individual tasks*

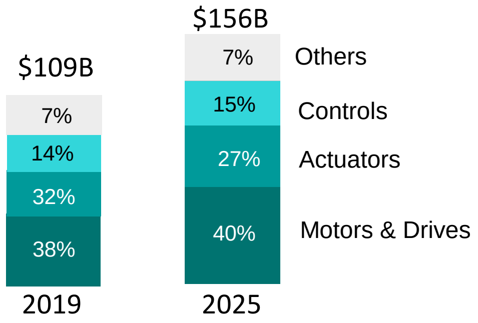
*All **three segments** are **fragmented**, High growth to be seen in **industrial software** and in **discrete automation**….*



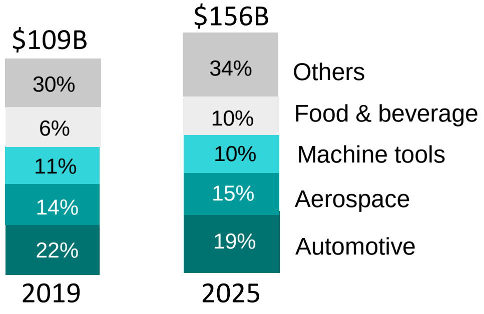


*Historically **Discrete Automation** has depended on **few industries for growth** but it is imperative to prepare **Automation solutions** for a **diverse set of industries***

Industry CAGR by component



Industry CAGR by end market



Industries driving growth

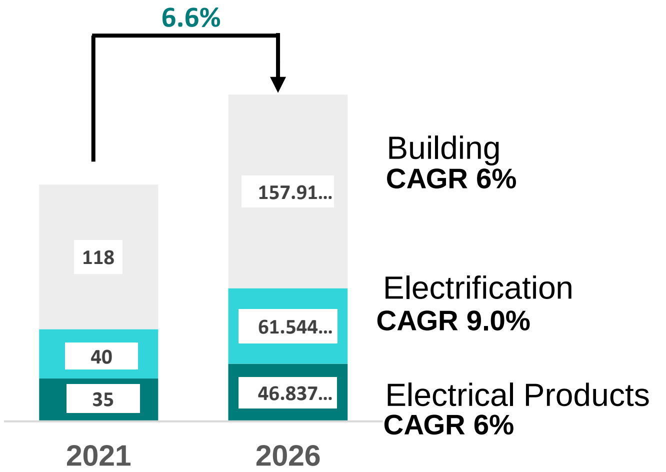
- Petrochemical
- Paper
- Pharma
- Utilities

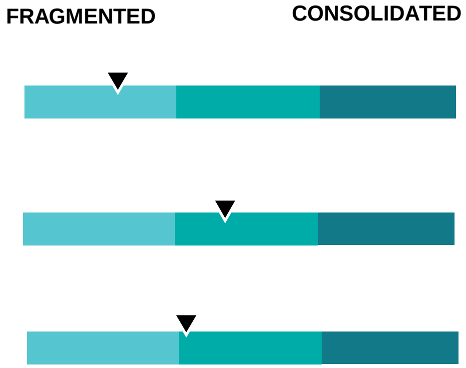
SOURCES: McKinney Industry 4.0 Capturing Value at Scale in Discrete Manufacturing, Mordor Intelligence, Technavio, Siemens Fact Sheet, LEK Discrete Automation, Google trend analytics

INDUSTRY (2/9): Smart Infrastructure

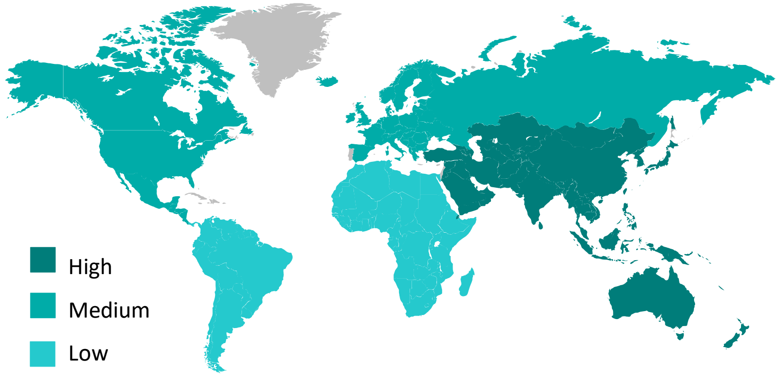
A focus on Electrification, and on Buildings in North America and APAC, and technologies like EMS may prove fruitful

*Due to **fragmented industry & high growth** – **buildings & electrification** seem attractive*





North America** is a Key Market with promising legislations for **residential and commercial buildings**, but **maximum growth** still to come from **APAC



- The U.S. Green Building Council runs the **'LEED' program** in collaboration with the Bank of America Charitable Foundation,
- **76% GHG emissions come from buildings** – US plans to curb this

*Competitors focusing their efforts towards improvement in **IoT** and in becoming **energy efficient** – and in these domains too some **key investment themes have emerged***

IoT and Building Automation

Key Themes – Surveillance, Automation, Thermostats

Energy Management and Renewable Energy

Key Themes – Solar, Inverters, EMS

- Maximum focus has been on automation companies.
- Energy Management has also been a priority Area with numerous acquisitions in the sector. **This reflects the growing demand for smart building technologies and solutions to reduce energy consumption and improve sustainability**.

According to the Energy Information Administration, or EIA, HVAC was the most energy-intensive application in commercial buildings in the United States and for them EMS Systems are required.

Key takeaway

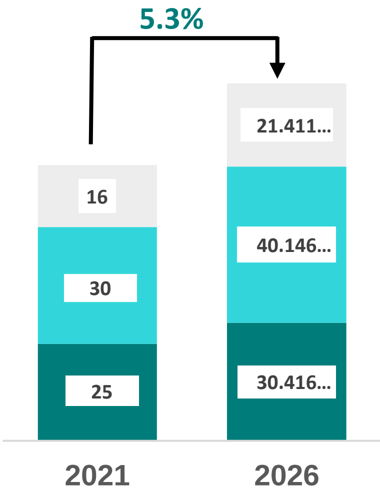
Companies should focus on EMS systems, Inverters, Automation Solutions and Thermostats

SOURCES: Siemens Business Fact Sheet, Mordor Intelligence, Annual Reports (ABB, Honeywell, GE Electric, Schneider Electric)

SIEMENS

Key markets for rolling stock (high growth segment) to be Europe & Asia while for rail infra - Africa & South America important.

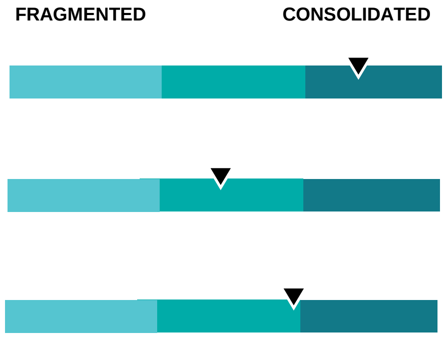
***Rolling Stock** - **largest** and **fastest** growing segment, but the industry is concentrated with a **few large players dominating**………*



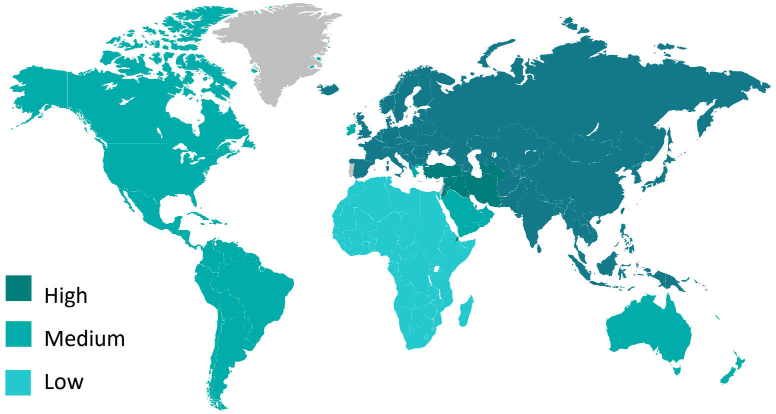
Rail Infrastructure
CAGR 6%

Rolling Stock
CAGR 9.0%

Customer Services
CAGR 6%



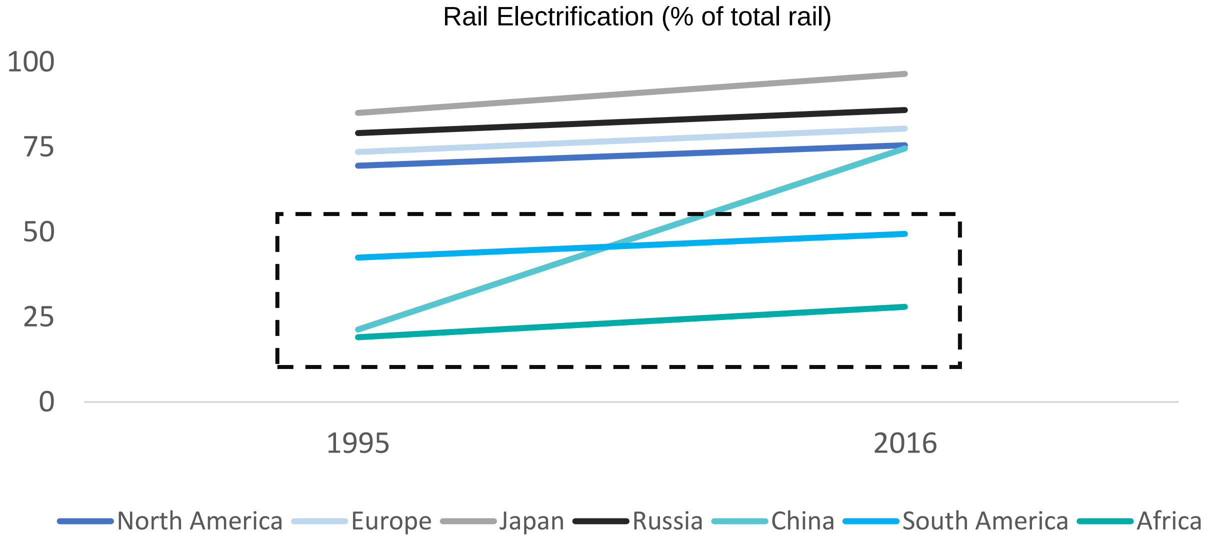
*For **Rolling Stock** - **Europe** and **Asia** to be key centers of growth*



Key growth drivers include:

- Modernization of existing infrastructure
- Focus on sustainability
- Government support
- Strong manufacturing capabilities

*For **Rail Infrastructure**, electrification projects will majorly come **from Africa and South America***



Priority areas for mobility by areas

Europe – Rolling Stock

Africa – Rail Infra

India - Solar

Rail Infrastructure Pain points

87% passengers believe that railways should reduce energy consumption

90% CXO's citing resilience a key concern

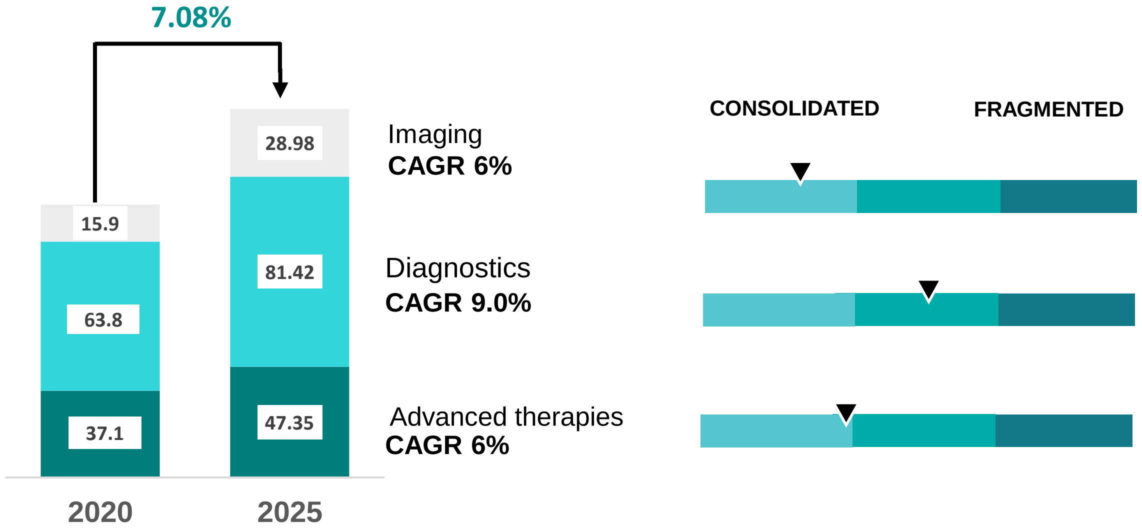
17% of all failures in transportation sector are power outages in railways

SOURCES: Siemens Business Fact Sheet, Mordor Intelligence, IEA – The Future of Rail

INDUSTRY (4/9) - Healthcare

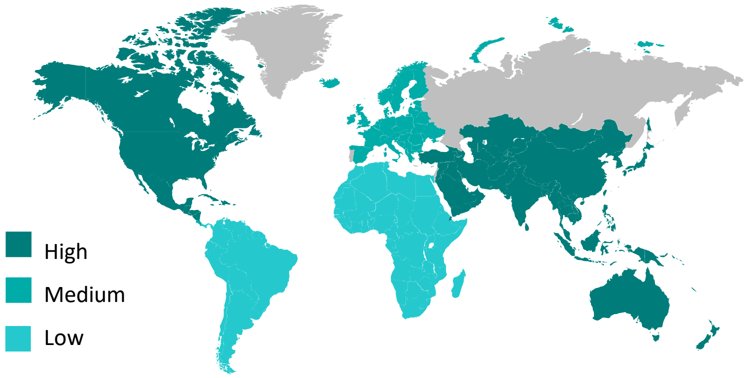
Growth for diagnostics, the largest segment will come from North America; Digitization is becoming important as well

Diagnostics** is the **largest and fastest growing sub-segment..



North America** is expected to **dominate the clinical diagnostics market

Clinical diagnostics market – growth rate by region

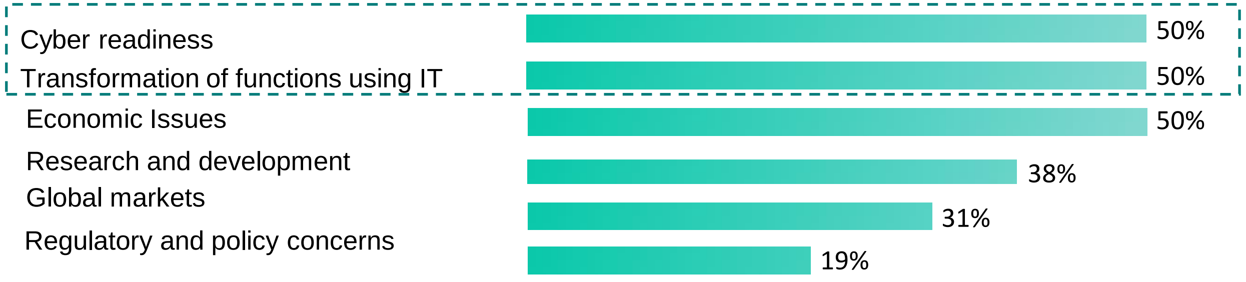


Market majorly driven by the increasing geriatric population, rising patient awareness about the value of laboratory tests, and the rising prevalence of infectious diseases.

rising funding activities to support the growth of clinical diagnostics

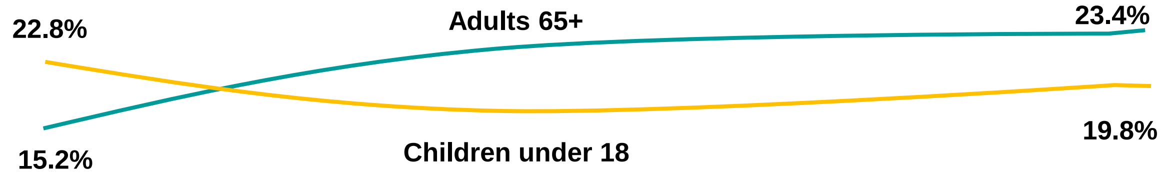
*There is an increasing trend towards **digitization …***

Top priority of health-tech companies

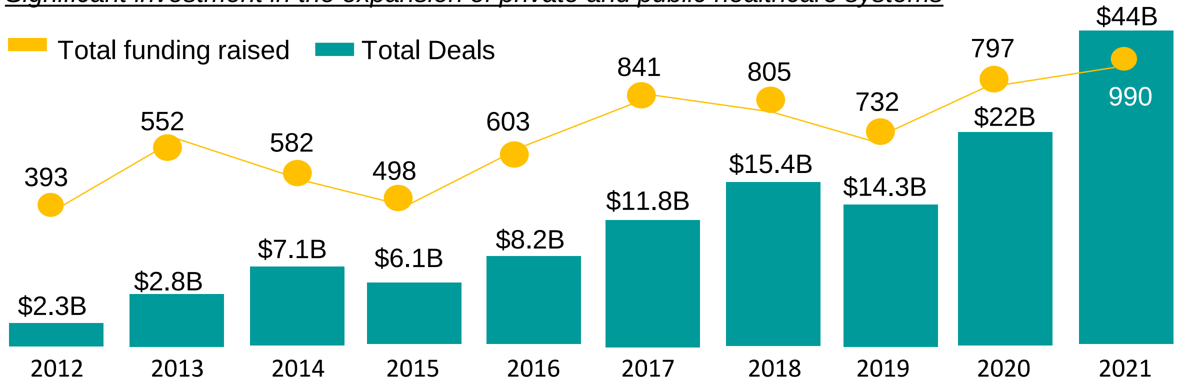


Market Growth drivers

Worlds ageing population puts more focus on healthcare….



Significant investment in the expansion of private and public healthcare systems



SOURCES: Grand View research, Deloitte global healthcare outlook, StartUp health insights

SIEMENS

INDUSTRY

What are the market trends in each segment that Siemens operates in?

Where is the potential growth ?

INDUSTRY OVERVIEW

APAC is a key market for **Smart Infrastructure and Digital Industry**. In DI, companies must start preparing automation solutions for diverse industries. **Investing in Electrification, Energy Management Systems, inverters and automation** is becoming critical. **In mobility, sustainability has taken hold,** and different geographies require different services. In healthiness diagnostic and imaging are expected to grow the fastest.

MACROTRENDS AND THEIR IMPACT

We cannot discount the impact the **Geopolitical Situation** will have – The **Russia Ukraine Crisis** has accelerated the switch **to renewables, impacting Power Generation, Distribution, and Storage**. In the Power generation segment**, Solar is expected to grow the most**, while Grid and Distribution now require more investment than wind to reach **Climate Goals**.

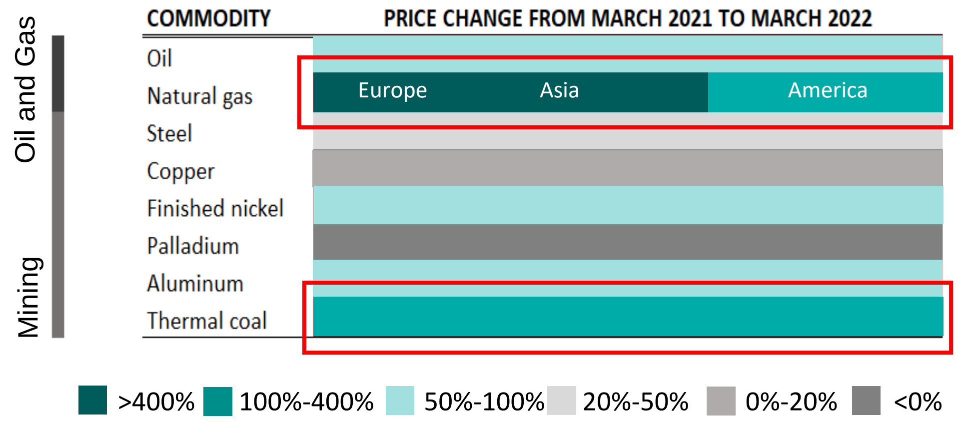
The **Chinese Hegemony on Renewables** also poses a risk, and any acquisition should consider this. This risk is minimal with **Energy Management Systems, inverters, and batteries.**

The Russia Ukraine crisis and resulting landscape of energy

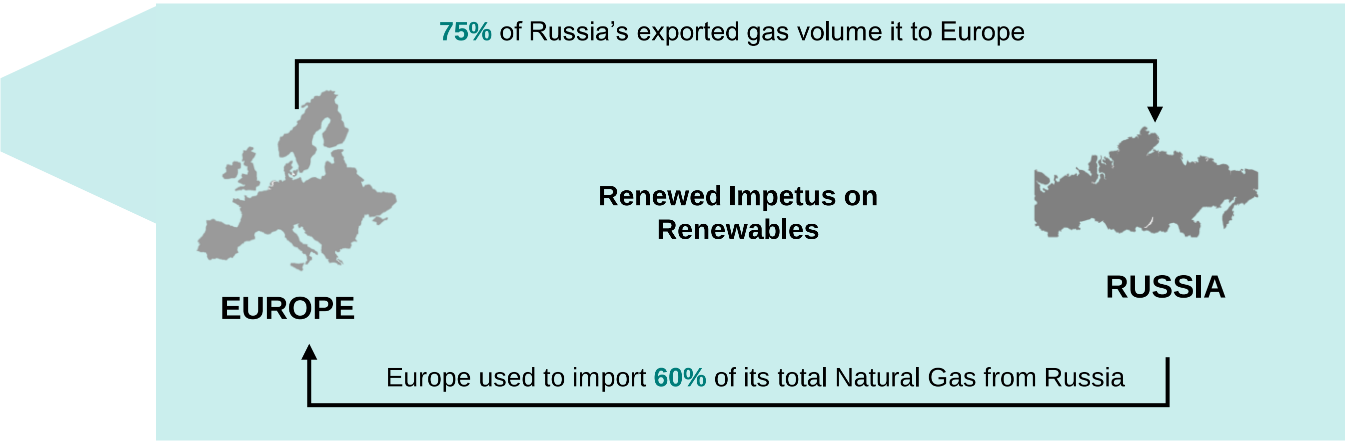
SIEMENS

With Rising Prices, renewables have become important, and new trends have emerged in power generation, distribution & storage

*The **price of numerous commodities**, specially **Natural Gas** have **increased** leading to….*

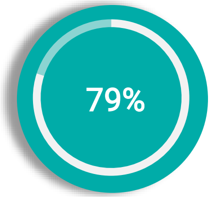


*…..A pressure on **Europe to find alternatives in order to reduce** their dependance.*

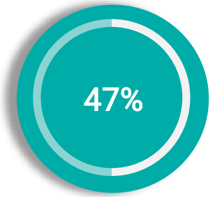


*This has made **CXO's make sustainability a prime concern***

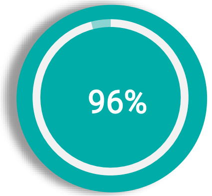
Say reducing Scope 1 And 2 emissions is a **key priority** for their company



Say that a net-zero commitment is critical



Expect their company to change significantly in the next 10 years (up from 30% in 2020)



Expect their industry to make progress toward net zero by 2030

*And has made a significant change in **power generation, storage and distribution***

Generation

84% of global power demand, which is estimated to grow 3x by 2050, can be met using renewable energy. More impetus is being given on this.

Storage

Long-duration energy storage technologies expected to drive **20%** of renewable adoption and short-mid duration storage expected to expand penetration from **30-80%**

Distribution

Advanced, intelligent electric grid system, involving **AI application** leveraging Big Data's potential, would provide real time insights and control for distribution grids

SOURCES: Team Analysis, Bain & Company Energy and Natural Resources Report (2022), McKinsey & Company Global Energy Perspective 2022

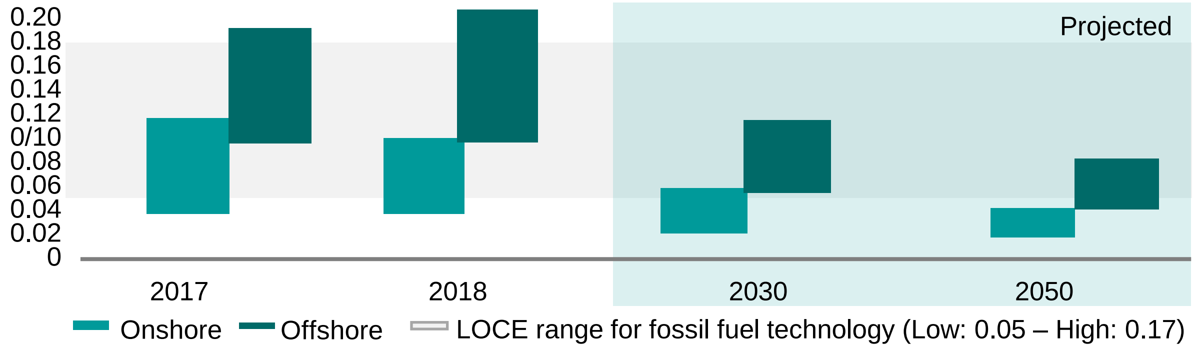
INDUSTRY (6/9) : Power generation – offshore wind v/s onshore wind

SIEMENS

As Onshore wind is competitive with fossil fuels, it is expected to grow faster; APAC to be key market

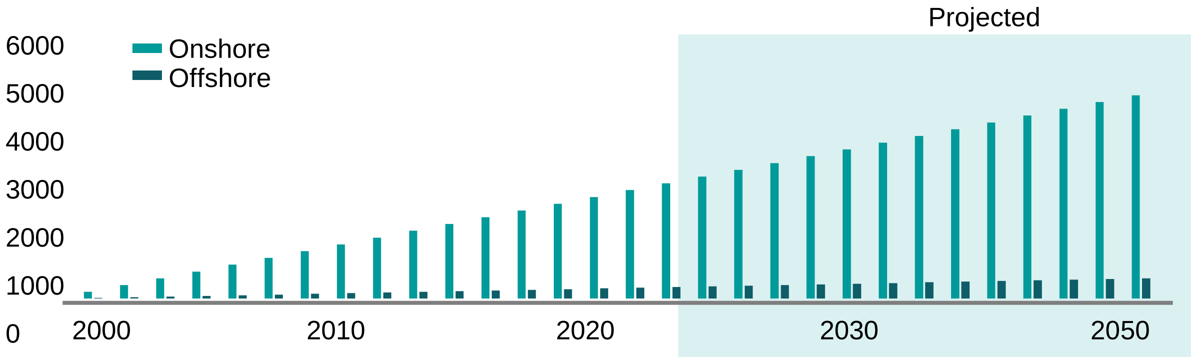
Onshore wind is cheaper** than offshore wind and **is already competitive** with fossil fuels. However, **offshore wind** is expected to be **competitive in 2030

Global levelized cost of electricity (LOCE) (USD/k) for onshore and offshore wind



Onshore wind** which is easier to set up is expected to see **higher growth than offshore wind

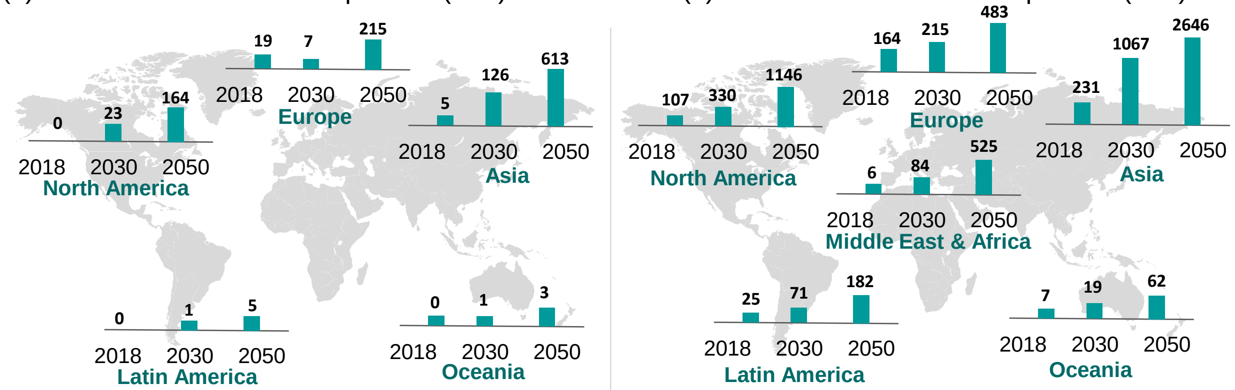
Global Cumulative Installed of Onshore and offshore wind Capacity (GW)



*Both of them will see the highest growth in Asia. However, the magnitude of importance will vary as **Asia will be highly important for Onshore**.*

(a) Offshore wind installed capacities (GW)

(b) Onshore wind installed capacities (GW)



China (at more than 2 000 GW) and **India** (at more than 300 GW) – would continue to **lead global onshore wind power installations**, with the region accounting for more than half of global capacity

*The **USA and European market** are highly concentrated, Companies would do well to enter **APAC***

Market share of wind energy by area

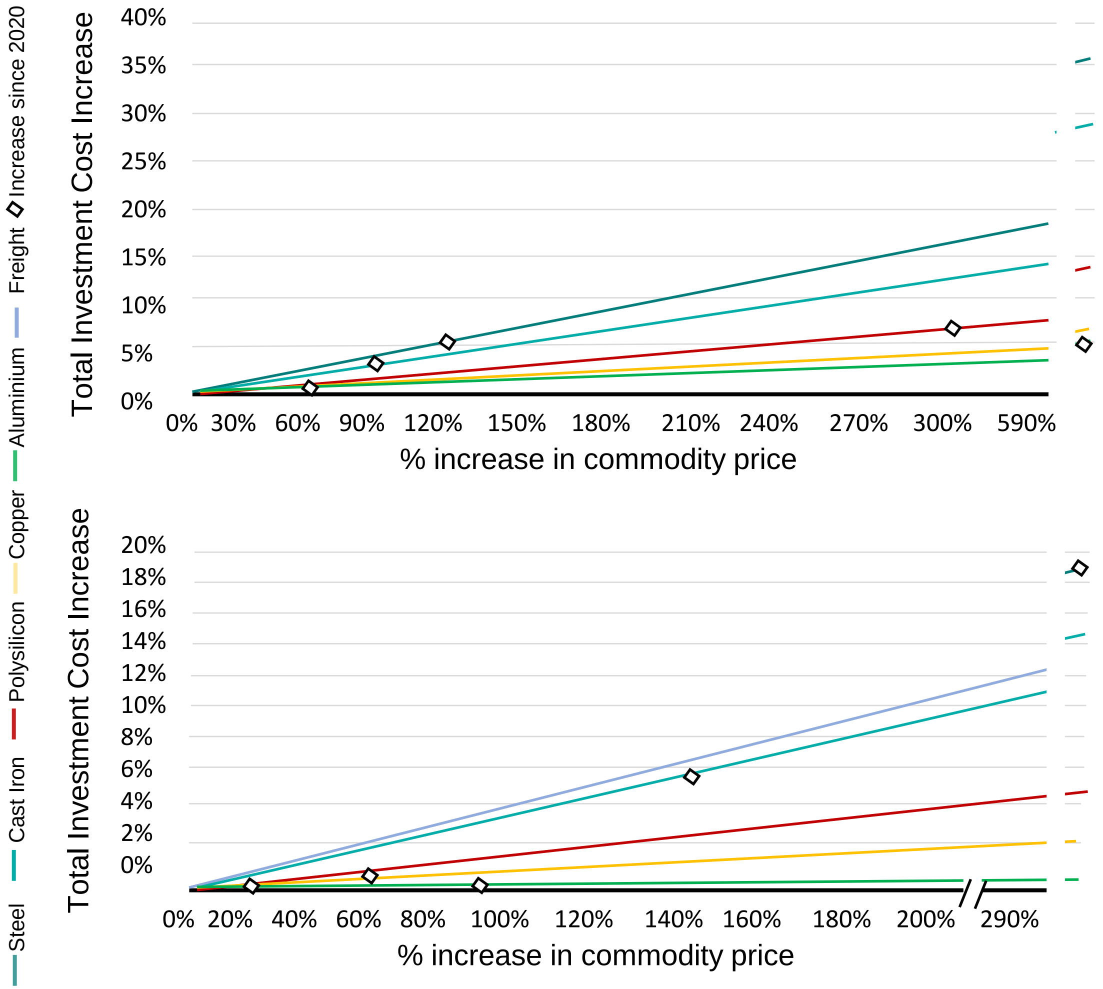
Company	Europe	USA	China	India
Vestas	29	35.4	2	
Siemens Games	26	23.2	1	23.8
GE Renewable Energy	6	29.4		4.5
Enercon	19			
Senvion	11			
Nordex Acconia	8			
Suzlon				33.7
Goldwind			31	
Envison			17.5	
Mingyang			11.8	
Concentration				

SOURCES: International Renewable Energy Agency (IRENA). (2019). Future of Wind

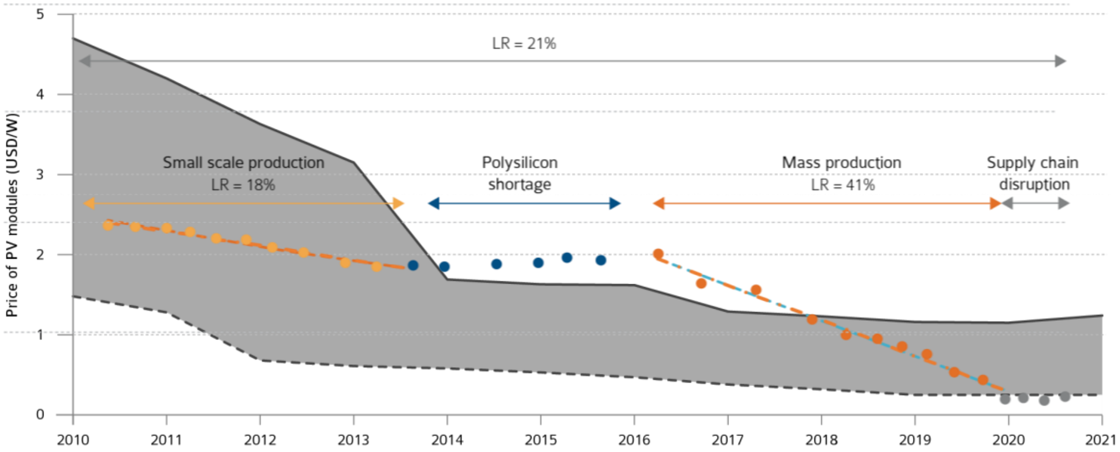
INDUSTRY (7/9) : Power generation – Solar vs Onshore wind

Despite the negative impact that increasing commodity prices have had, solar remains cheaper than wind

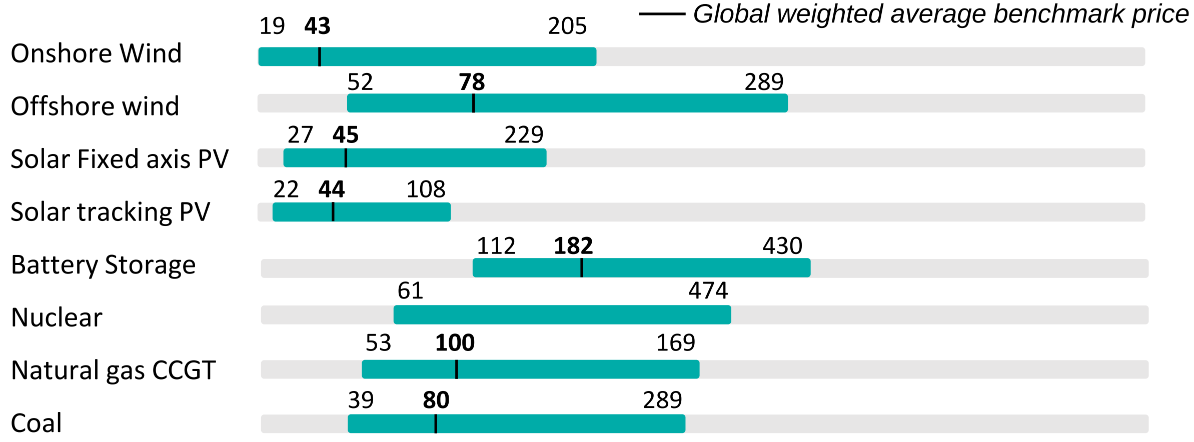
***Prices of commodities** used in Solar has **increased more than the price of commodities** used in **onshore wind** ….*



*However despite this **Solar remains the cheapest and most lucrative option**…..*



***Cost of Power generation sources** (USD/MWh)*

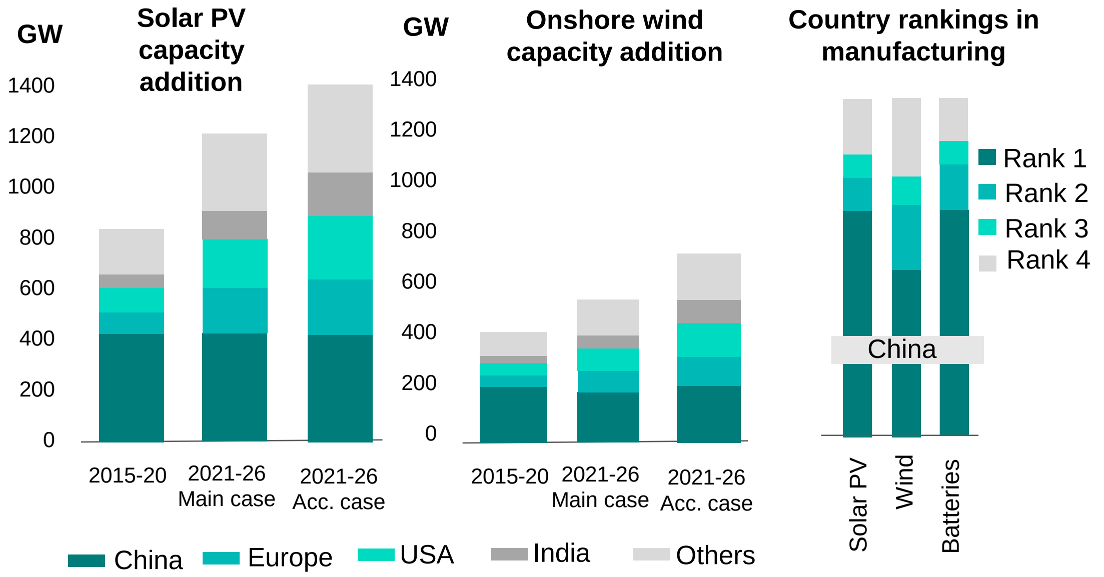


SOURCES: International Energy Agency. (2022). What is the impact of increasing commodity and energy prices on solar PV, wind, and biofuels?, IEA PVPS (2022)Snapshot of Global Photovoltaic Markets: Trend Report 2022

INDUSTRY (8/9) : Power generation – China's dominance on supply chain

China's hegemony on renewable is more potent in other renewables than it is in Solar Energy due to high investment in Solar

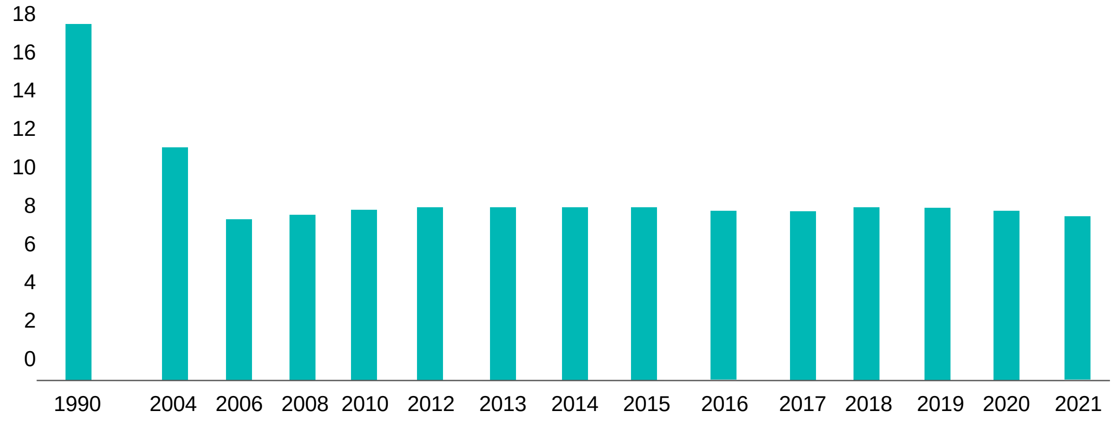
Growth in solar** is expected to be a lot more than growth in **onshore wind,** and **dependence on China** is not limited to solar **despite contrary beliefs



*Solar's dependence is due to **silicon being sourced from China…***

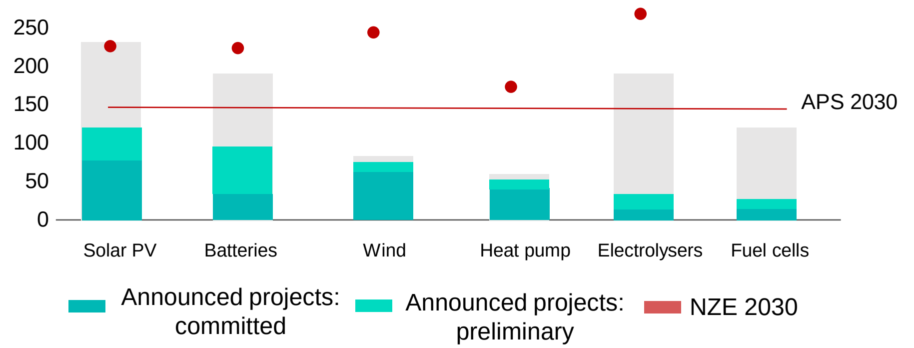
*To **reduce this dependence, significant** effort has been made to use **less silicon** and it has paid dividends…*

C-Si Solar Cell Development: Poly-Si consumption in Solar Cell (g/Wp)



*The **future of Solar** is safe as of **maximum pledge of funds** across countries has been to Solar …*

Share of 2030 APS deployment



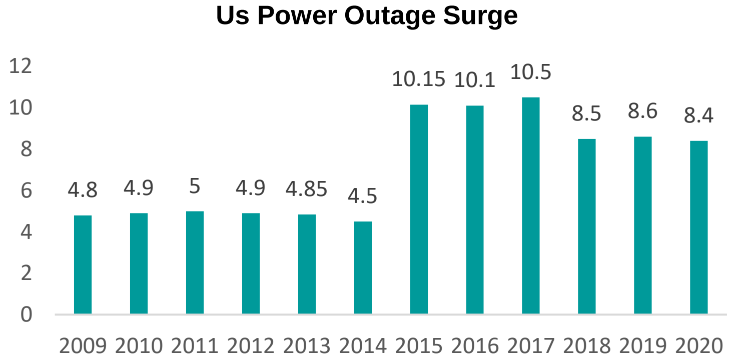
SOURCES: International Energy Agency. (2023). Energy Technology Perspectives 2023, IEA Photovoltaic Power Systems Programme (IEA PVPS). (2022). Snapshot of Global Photovoltaic Markets: Trend Report 2022

INDUSTRY (9/9) : Power distribution and storage

Investment in grid & distribution is necessary and is less prone to geopolitical shocks

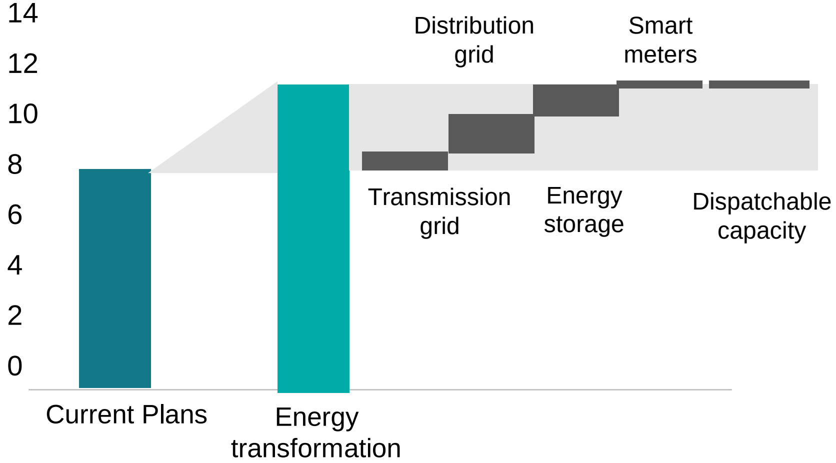
*The **grid infrastructure** of most countries is in need of **upgrades and modernization…***

We see increasing power outages in even developed countries…



…as the grid infrastructure gets old. The average age of the grid is 40 with the maximum lifetime of these equipment being 50 years.

*…and the shift towards **renewables** necessitates **additional investments** required in grids*



*and a surge in the **growth rate of Energy storage solutions** too…*

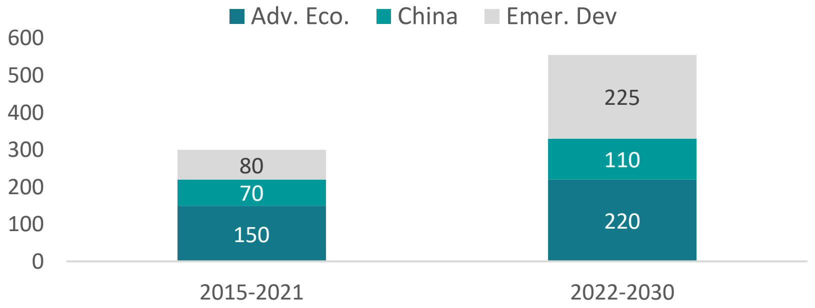
Market Size in 2022	Market Size in 2030
36,774 MW	**410,543 MW**

APAC is fastest growing Market with CAGR of **56%**

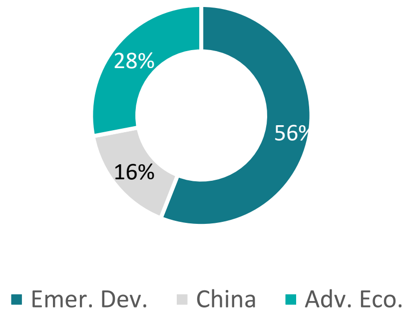
Market Growth will accelerate at a CAGR **35.2%**

*To get to the **Net Zero scenario trajectory**, investment in storage and distribution systems needs to be doubled...*

Average annual investment spending in Billion USD



*..with only **16% ofthe total growth** coming from **China**, there is less dependence and volatility*



Comprehensive scorecard	Growth	Dependence on China	Overall attractivenesse
EMS			
Grid solutions			
Normal Inverters			
Battery and storage solutions			
Inverters for renewables			

SOURCES: Team Analysis, IEA, North American Electric Reliability Corporation

SIEMENS

INDUSTRY

What are the market trends in each segment that Siemens operates in?

Where is the potential growth ?

COMPANY

What is the competitive position of the company in each segment – are they ready to capitalize on trends or are they lagging behind?

What weaknesses need to be addressed ?

SIEMENS

COMPANY

What is the competitive position of the company in each segment – are they ready to capitalize on trends or are they lagging behind?

What weaknesses need to be addressed ?

Siemens should work to **improve margins** in its **Smart Infrastructure Segment** – where competitors are growing through acquisitions. Its Digital Industry Segment is doing well, the only requisite is to reduce its dependence on Automotive Sector. Healthineers has grown massively on the back of its Diagnostic and imaging business, **whereas the Rail Infra segment of Mobility has stagnated. Siemens should try to Scale up Mobility as it has industry-leading margins.**

Smart infrastructure and digital industries performance (1/2)

SIEMENS

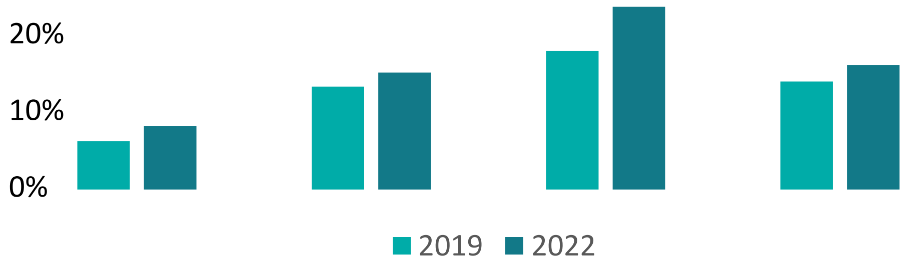
Leading in the DI segment, Siemens trails in margins and revenue in smart infra, a segment where acquisitions drive growth

Smart Infrastructure

Size of bubble represents revenue

	Johnson Controls	Schneider Electric	Emerson	Siemens
R&D as % of Revenue	1.22%	2.61%	2.85%	7.95%
Number of Startups acquired past 5 years	11	3	14	15
Revenue growth	1.36%	3.54%	1.67%	1.41%

EBIT Margins



Key Takeaway

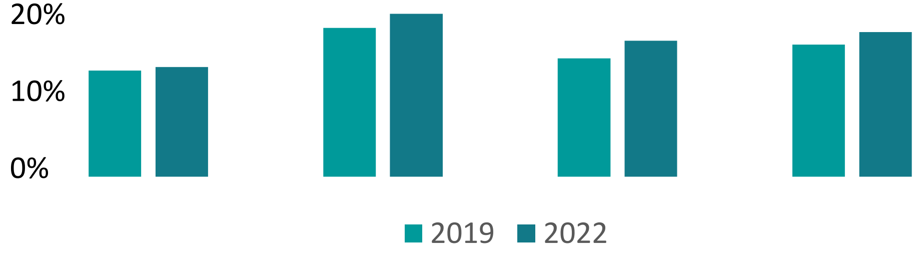
- Siemens smart infrastructure's **revenue growth is decent for its size**.
- However, the company must make efforts **to improve its margins. It is trailing Emerson.**
- **Acquisitions** seem to be **drivers of growth** in the segment

Digital Industries

Size of bubble represents revenue

	Rockwell Automation	Dassault Systemes	PTC	Siemens
R&D as % of Revenue	13.3%	19.6%	17.8%	7.95%
Number of Startups acquired past 5 years	5	4	5	15
Revenue growth	3.76%	7.91%	11.31%	3.13%

EBIT Margins



Key Takeaway

- The company's DI segment is **leading its competitors** in Revenue.
- Despite its large size has **decent margins**, and has been able to grow its revenue at a good pace
- Most of growth in the industry seems to be driven by **R&D spend.**

SOURCES: Traxcn, Mergr, Annual Reports (Emerson, Johnson Electric, Schneider Electric, Siemens, Rockwell Automation, Dassault Systems, PTC), Team Analysis

Smart infrastructure and digital industries performance (2/2)

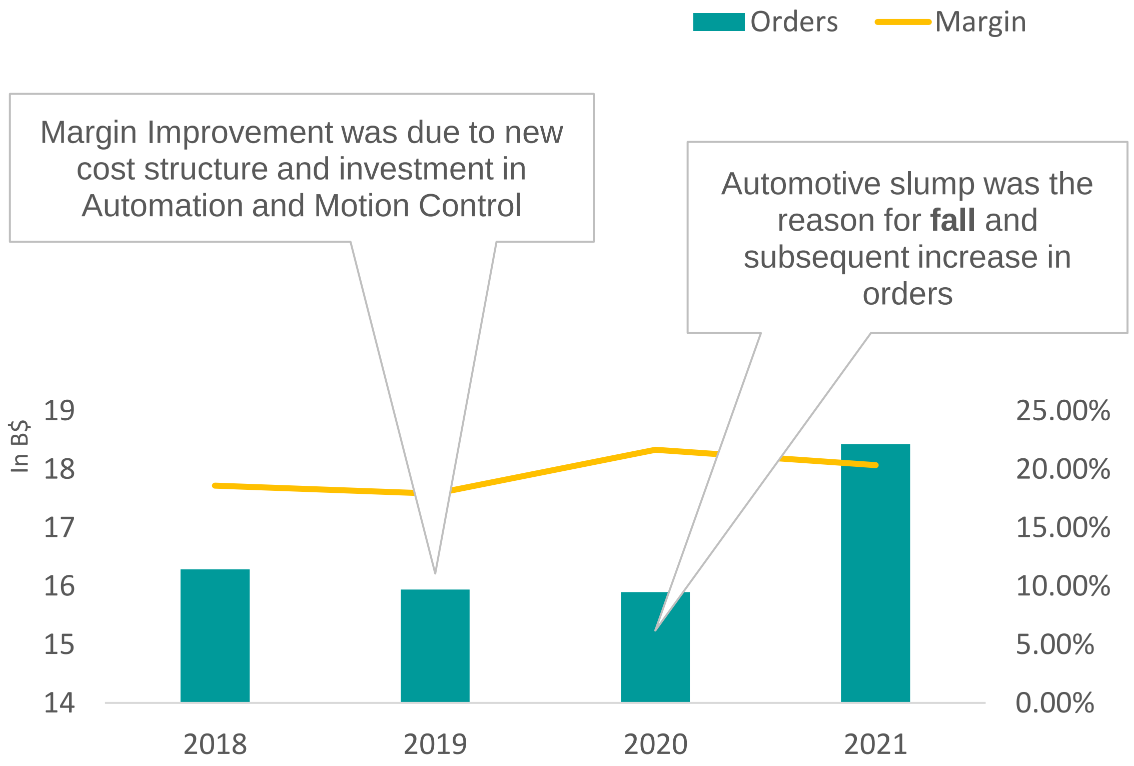
SIEMENS

High dependance on few core industries a concern in DI, while in Smart Infrastructure segment, margins & growth are a worry

Digital Industries

Imperative: Reduce dependence on Automotive Sector for orders

Digital Industries Value of Orders and EBIT Margins (right axis)



Strength :Superb margins

Company has further focused its R&D efforts on **Automation and Motion Control**, which were the reasons for margin expansion in the first place.

Strength : Product and Collaborations

Smart Infra

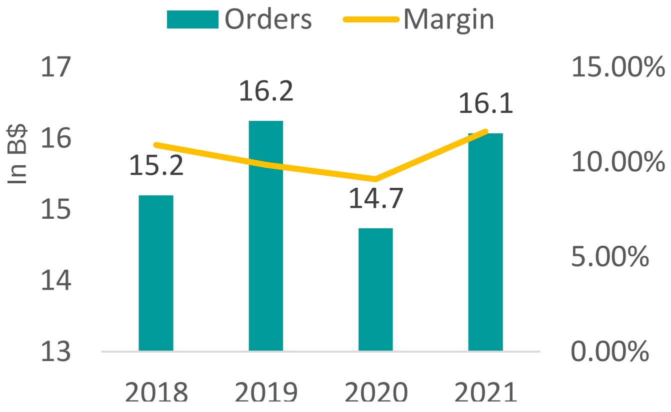
Weak Macros Stifled Growth

Imperative : Low Margins and growth

Business explained :

Building Segment provides Integrated building management systems and software; heating, ventilation and air conditioning (HVAC) control Electrification makes gird more resilient & products business supplies building and electrification segments.

SI Value of Orders and EBIT Margins (right axis)



The **margin improvement** was due to the **cost saving program** introduced during COVID 19.

SOURCES: Siemens Annual Reports (2019-22), Team Analysis

Mobility and healthineers performance (1/2)

SIEMENS

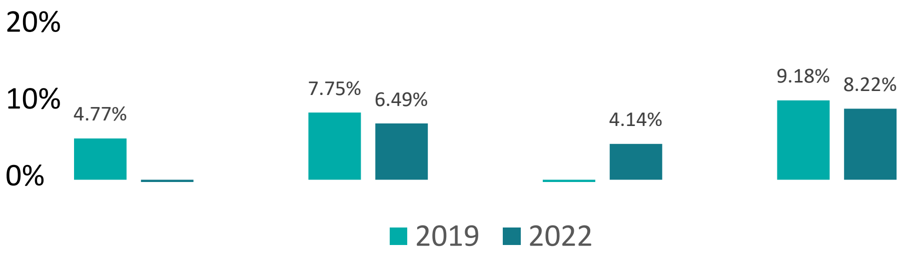
Siemens should look to capitalize on its margins and scale up its mobility segment; Healthineers sees decent reinvestment

Mobility

Size of bubble represents revenue

	ALSTOM	中国铁建 (CRCC)	HYUNDAI Rotem	SIEMENS
R&D as % of Revenue	3.7%	5.73%	0.57%	7.95%
Number of Startups acquired past 5 years	6	1	4	15
Revenue growth	17.66%	-1.36%	5.47%	3.59%

EBIT Margins



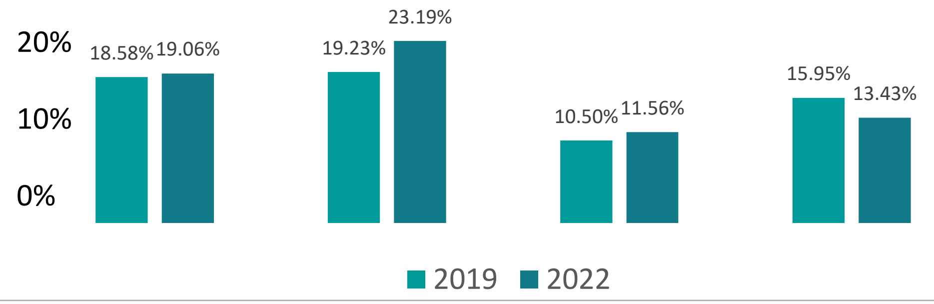
Key Takeaway

- Siemens has been **able to maintain its margins unlike other competitors** Alstom has scaled up fast, but in the process has sacrificed its margins whereas CRCC is slowing down.
- Siemens should try to scale up its operations
- CRCC is dominating the market

Healthineers

Size of bubble represents revenue

	ThermoFisher SCIENTIFIC	Agilent	BD	SIEMENS
R&D as % of Revenue	3.61%	7.72%	6.45%	8.81%
Number of Startups acquired past 5 years	11	12	8	3
Revenue growth	20.70%	9.8%	2.96%	10.58%



- Siemens growth has been more average
- It has decent margins and is reinvesting aptly as well.

SOURCES: Traxcn, Mergr, Annual Report (Alstom.CRCC.Hyundai Rotem, Siemens, ThermoFisher, Agilent, BD)

Mobility and Healthineers performance (2/2)

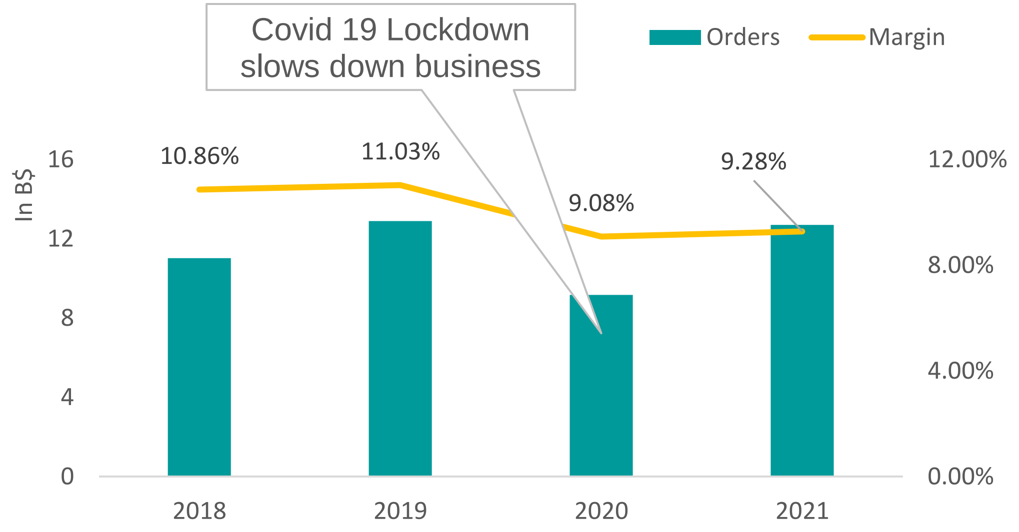
SIEMENS

Healthineers is doing well on the back of smart acquisitions and its Diagnostic business; Rail infra in Mobility needs intervention

Mobility

***Imperative**: The high margin rail Infra business is underperforming putting margin pressure*

Mobility Value of Orders and Margins (right axis)



Takeaway

- ✓ Rail Infra is a relatively underperforming segment
- ✓ Its high margin, so reduction in its share reduces our margins

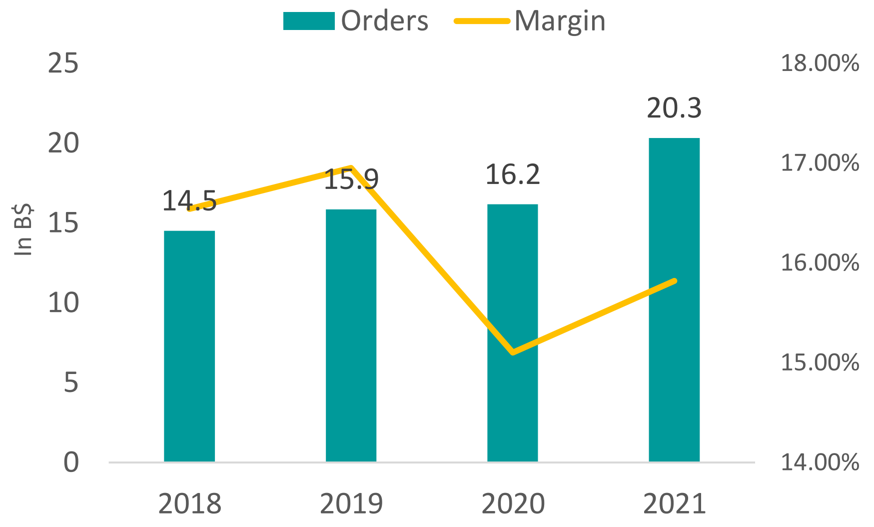
How Rolling stock won orders across Europe

Among the major contract wins were a **€1.6 billion** order for metro trains in the U.K., a **€1.2 billion** contract for high-speed trains including maintenance in Russia, a **€0.8 billion** order for train sets including service in Canada, a **€0.7 billion** contract for diesel-electric locomotives including a service agreement in the U.S. and two orders in Germany worth **€0.4 billion and €0.3 billion.**

Healthineers

Strength: The company has witnessed a massive revenue growth

Healthineers Value of Orders and Margins (right axis)



Strength: Acquisitions

Acquisitions have been smart. Their recent investment, Varian added **12% points to order growth 9% to revenue growth**

Strength: Diagnostic and imaging

Diagnostic and imaging have been greatly contributing to orders

SOURCES: Siemens Annual Reports (2019-2022)

SIEMENS

TARGET ANALYSIS - VESTAS

III

Are we getting a company that helps Siemens in achieving its vision of making the world more sustainable?

Does this acquisition cover the industry trends that we found through our analysis -
Importance of expanding SI and DI in APAC, of improvement in the electrification business, of Energy Management Systems and Renewable Inverters, or of obtaining share of the Solar Energy market or APAC's wind energy market

Does this acquisition help us in covering the company's priority areas – scaling up mobility, improving margins in Smart Infrastructure

Will this deal create value ?

SIEMENS

COMPANY OVERVIEW

Where is Vestas currently standing in the industry landscape?

Where is the potential growth ?

STRATEGIC FIT

What are the benefits and synergies that might arise if there is an acquisition?

How does it help Siemens fulfil its future goals?

COMPANY OVERVIEW

Where is Vestas currently standing in the industry landscape?

Where is the potential growth ?

Vestas is a market leader in wind energy solutions having a global footprint. It is facing margin and profitability pressures due to global macroeconomic trends, but is poised to grow in the future across different segments, specially in offshore turbine installation.

Vestas : Introduction

SIEMENS

Vestas has transformed itself from being a kitchen appliance maker to being a global leader in sustainable energy solutions

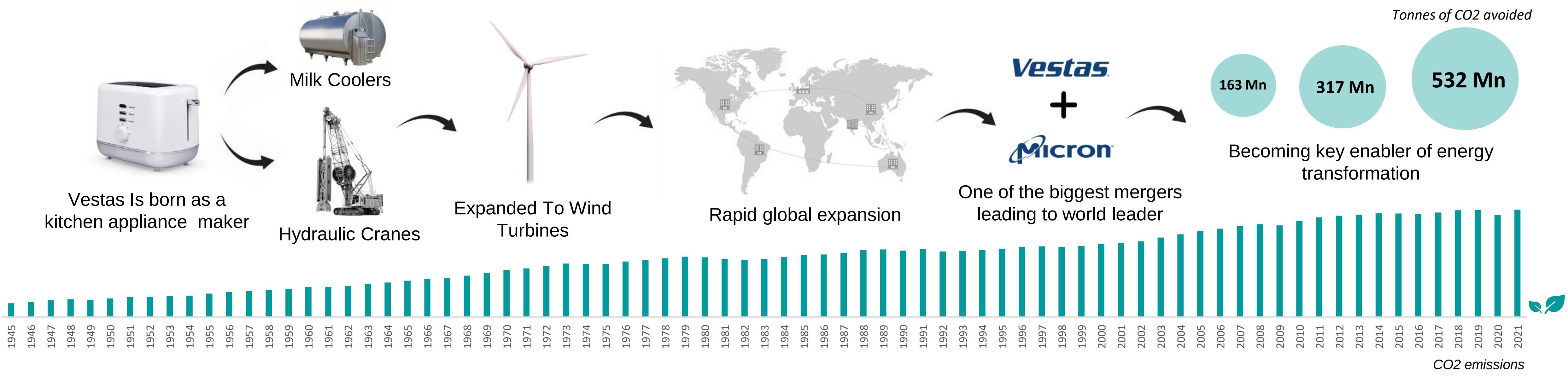
Overview of Vestas: *development and current scenario*

- A **Danish** manufacturer, seller, installer, and servicer of wind turbines
- Founded in **1945** and is now headquartered in **Denmark**
- In fiscal 2022, generated revenue of **€14.486 billion** and a net income of **€-1.05 billion,** with 5-year revenue CAGR of **7.8%**
- **+160 GW** of wind turbines installed in **88** countries
- First company to reach the **100 GW** landmarks for both the installation and service

Business Model of Vestas

- **Sales of wind turbines:** Vestas designs, manufactures, and sells wind turbines of various sizes and capacities to customers worldwide. Vestas offers a wide range of turbines for different wind conditions.
- **Service and maintenance:** Vestas also provides ongoing service and maintenance for its wind turbines to ensure their efficient operation and longevity. This includes both on-site and remote monitoring and maintenance services.
- **Project development:** Vestas also provides project development services, including wind resource assessment, feasibility studies, and environmental impact assessments.
- **Power purchase agreements:** Vestas has also entered into power purchase agreements (PPAs) with customers in certain markets, where Vestas provides wind energy at a predetermined price over a long-term contract period.

Evolution over the years: *Together with their customers, they aim to create a more **sustainable** planet by delivering **sustainable energy solutions***



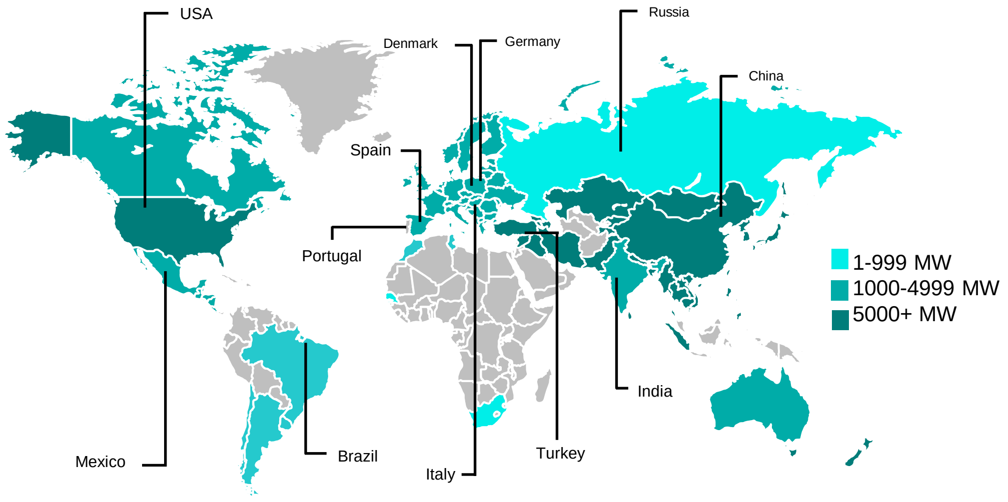
SOURCES: Company Website, Annual Report

Footprint and Product offerings

SIEMENS

Vestas has a very broad customer base, with them providing all the complementary solutions in the wind turbine segment

*Vestas has an order intake from **very diversified sources...***



Americas – Order Intake (MW)

2018	2019	2020	2021	2022
6271	10269	6403	4571	**4547**

Deliveries (MW): 4,520 ↓21%

Top Markets: USA 2275 MW; Brazil 1528 MW; Canada 325 MW

Europe, Middle East, Africa – Order Intake (MW)

2018	2019	2020	2021	2022
5599	6001	7417	7637	**4568**

Deliveries (MW): 7,467 ↓13%

Top Markets: Finland 1185 MW; France 1002 MW; Poland 399 MW

Asia Pacific – Order Intake (MW)

2018	2019	2020	2021	2022
2344	1607	3429	1688	**2074**

Deliveries (MW): 1,341 ↓40%

Top Markets: Japan 399 MW; Australia 376 MW; Vietnam 179 MW

*..and offers **4 kinds of solutions, each growing at a rapid pace***

Development

	2022	2021
Projects Sold (number)	**4**	6
Order intake (GW)	**1.6**	1.5
Project pipeline (GW)	**32.1**	24.6

Strong and increasing demand for the fast growing pipeline of development projects

Onshore

	2022	2021
Deliveries (MW)	**12.4**	14.6
Order intake (GW)	**10.5**	13.0
Order backing (GW)	**17.4**	19.5

Strongly Building market leadership in Brazil with order intake of 1.9 GW

Offshore

	2022	2021
Deliveries (MW)	**0.9**	2.0
Preferred Supplier Agreements (GW)	**5.1**	3.5
Order backing (GW)	**2.2**	2.4

Development of 15 MW turbine on track with prototype installed and generating electricity

Service

	2022	2021
GW under service	**144**	129
Average backing contract duration (years)	**11**	10
Order backlog value (bn)	**30.4**	27.8

Step change in Service revenue driven by higher value of renewable electricity

- Shift in focus to offshore solutions too with increasing market share here
- Increased infrastructure spending leading to more turnkey project orders
- Huge order backlog in Service segment which looks promising
- Global Leader in Onshore solutions

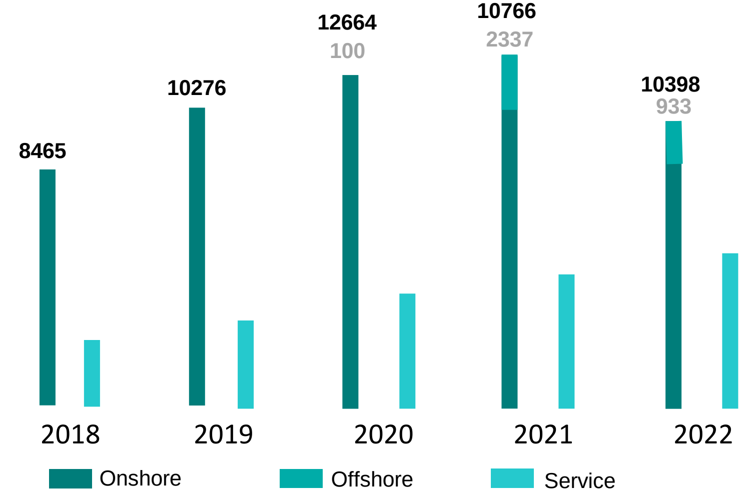
SOURCES: Company Website, Annual Report

Current financial position and problems faced

SIEMENS

Macroeconomic environment created adverse headwinds, and Vesta's attempt at salvaging the situation by a price hike failed

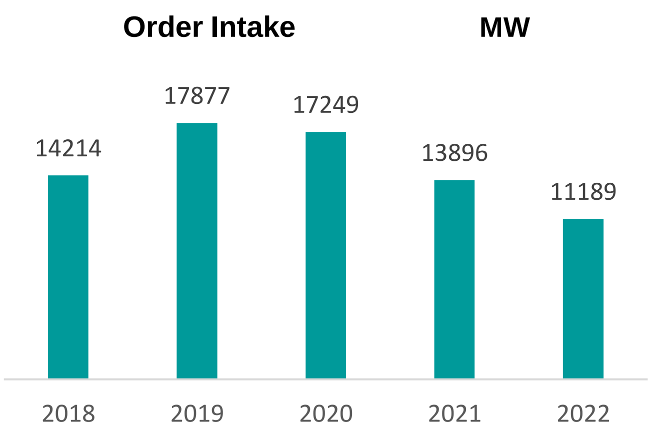
*The **long term revenue growth** of the company has been **good….***



↑ **43%**

In just four years, Vestas managed to increase revenue by 43% - from EUR 10,134 in 2018 to EUR 14,486 in 2022

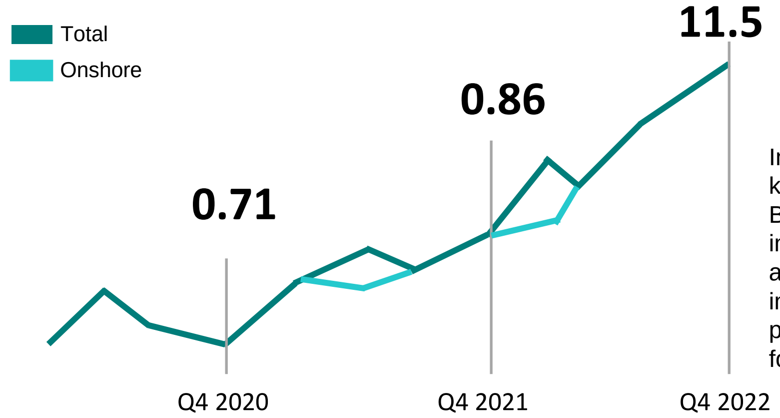
*…however we see a **decline in order intake since the last year***



Why has EBIT been declining

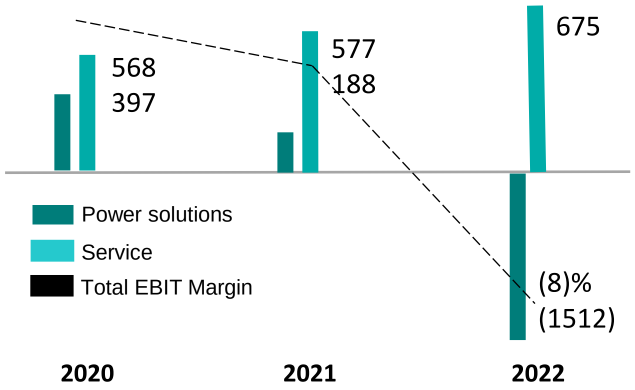
- Supply chain disruptions
- High inflation costs
- Higher warranty provisions
- Offshore impairments

Increase in price ***had been seen as a value creator…***



Increased pricing is key to value creation. Both to mitigate cost inflation and to secure a higher share of the increasing value our power solutions create for our customers.

*…but **margins have still eroded a**n future looks uncertain*



Why orders have been declining

- Russia/Ukraine exit
- Geo-political uncertainty
- Trade barriers
- Energy crisis

What does higher price mean

Average selling price is at the highest level in the last decade.

- More ROI for investors
- Increased cost of electricity
- Other sources may get more attractive

SOURCES: Team Analysis, Company Website, Annual report, Wood mackenzie, Bloomberg

The Road Ahead

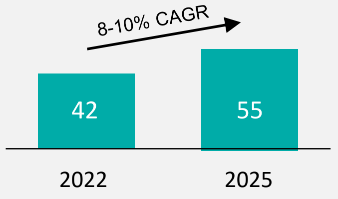
SIEMENS

Despite the headwinds they face, the company expects to grow; demand expected to rise in all segments

However it still expects growth to bounce back in each of its segments….

ONSHORE
Restarting Growth

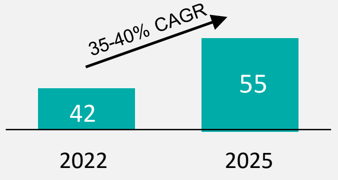
Market expectation 2022-2025
New installations (GW)



- ✓ Declining activity expected in 2023
- ✓ Increase in 2024 and 2025 driven USA, Europe, and Africa

OFFSHORE
Global expansion

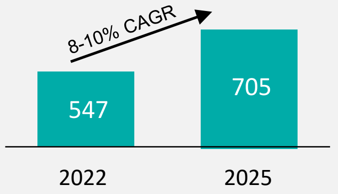
Market expectation 2022-2025
New installations (GW)



- ✓ Strong expansion in Europe and new markets such as the USA and Korea and broader Asia Pacific
- ✓ Growth to accelerate post 2024 but PPA levels needs adjustments

SERVICE
Solid Growth

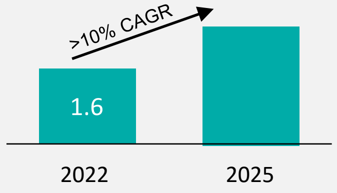
Market expectation 2022-2025
New installations (GW)



- ✓ Solid growth from high base
- ✓ Power price increases and electricity shortage to drive higher need for output optimisation

DEVELOPMENT
Foundation in place

Vestas' expectation 2022-2025
FOI generated (GW)



- ✓ Ambition in Development to outgrow the total market growth in FOI generated
- ✓ Own developed projects to further leverage side deals

Financial ambitions
Wind power has outcompeted fossil fuel alternatives inmost parts of the world, and the prospects for the coming years are promising, with wind power increasingly central roles critical Infrastructure. Consequently forecasts indicate average annual growth in total wind power capacity of 9 percent towards 2030.

Onshore
Vestas expects to see increasing contributions from its Development activities. On this background, Vestas maintains its long-term ambitions to grow faster than the market and be market leader in revenue within Onshore wind.

Offshore
By 2025, upon the steep increase in annual offshore installations and Vestas' new platform gaining traction in the market, Vestas aims to be a leading player in offshore wind power. Based on these assumptions, Vestas has an ambition to achieve revenue n the Offshore business area of EUR +3bn by 2025, with an EBIT margin on par with the Onshore business.

Service
In the longer term, the Service EBIT margin's expected at a level of around 25%, taking into account the integration of the Offshore business, which currently generates lower margins than Onshore.

Long term financial ambitions

Revenue	Grow faster that the market
EBIT margin before special items	At least 10%
Free cash flow	Positive
ROCE	20% over the cycle

SOURCES: Annual report

SIEMENS

STRATEGIC FIT

What are the benefits and synergies that might arise if there is an acquisition?

How does it help Siemens fulfil its future goals?

Siemens must decide whether it wants to enter an industry which is struggling right now, and if Vestas is the right fit. We see that although the acquisition won't lead to supply chain diversification (which is the need of the hour of them), it would still lead to a lot of synergies in the form of increased market share, economies of scale, and more efficiency.

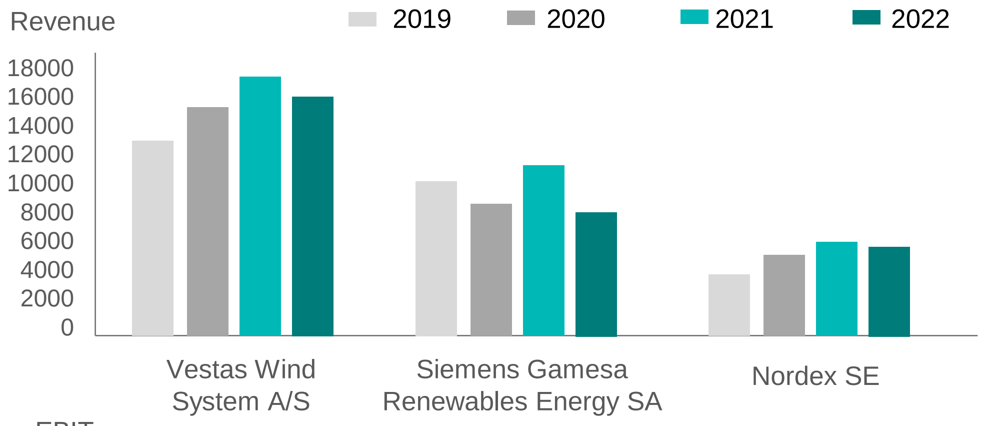
Where They Don't Fit Together…

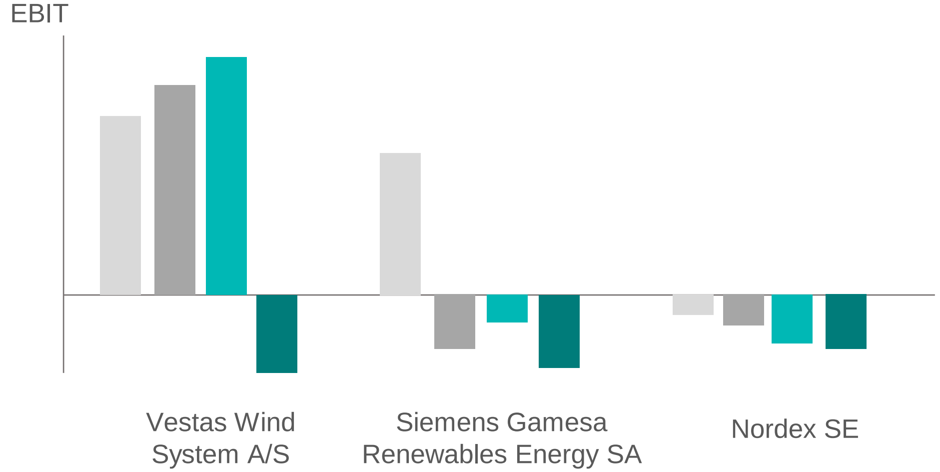
SIEMENS

In an industry that's already facing headwinds currently, Vestas fails to address the major issue – Supplier concentration

*Due to factors already discussed before, In an industry which is **struggling** right now, do we want to **double down our bet when we already are market leaders…***

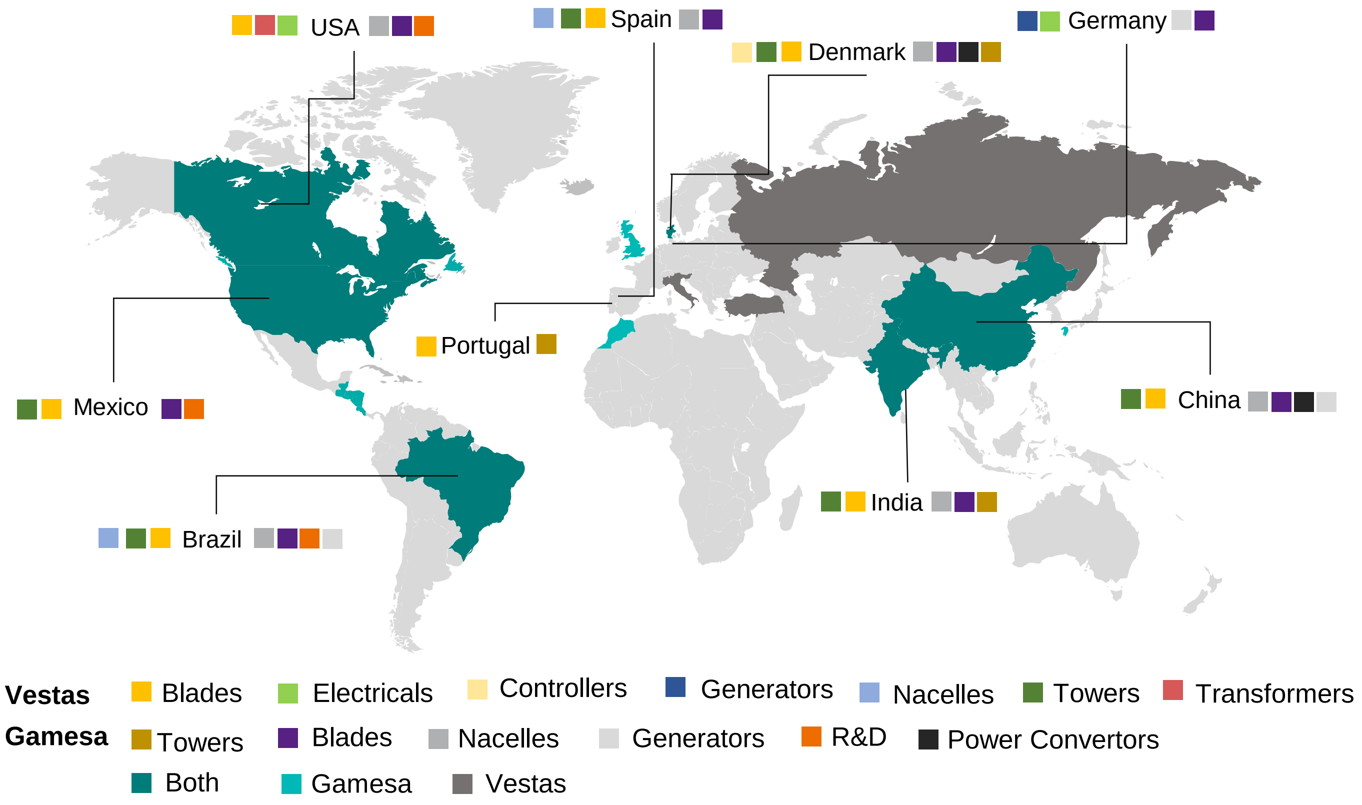
European turbine-makers forecast to post losses in 2022 (EUR M)





*…and if yes, does **Vestas provide the right supply chain diversification,** which is the need of the hour because of the **supply chain issues faced due to macroeconomic trends***

We need more diversity in our supply chain, but acquiring Vestas would not fulfil the gap…



…as there is a major overlap from where each of the companies sources its parts, with them facing the same supply chain issues.

SOURCES: Annual reports, Bloomberg, S&P Global report

…And Where They Do (1/2)

SIEMENS

Identified synergies include increased market share, optimisation of supply chain, and increased efficiency

Synergy	Description	Ease of quantification	Ease of realisation
Increased Scale And Market Share	By combining the resources, the merged company would become a dominant player in the wind energy market leading to: - greater bargaining power with suppliers and customers - improved pricing power.		
Improved research and development	They both have strong capabilities, and a merger could lead to the pooling of resources and expertise in this area. This could result in faster development of new products and technologies, and a more competitive product portfolio. - Siemens' wind energy division has a strong focus areas such as **turbine design and control systems**, and has developed several advanced wind turbine technologies such as **direct drive systems**, and a **hybrid energy storage system**. - Vestas' R&D activities are primarily focused on **wind turbine technology** and optimizing the performance and efficiency of its wind turbines. It has developed several digital solutions for **wind farm optimization** and **predictive maintenance**.		
Enhanced operational efficiency	- **Consolidation of manufacturing facilities**: The combined company could potentially rationalize its manufacturing footprint and reduce duplication, resulting in cost savings and improved efficiency. - **Increased economies of scale:** A larger, combined company would have greater purchasing power, which could result in lower procurement costs for raw materials and components. This could also lead to increased bargaining power with suppliers, resulting in better pricing and more favourable contract terms. - **Reduction in overhead costs:** A merger could also result in a reduction in overhead costs, such as administrative expenses		
Optimised supply chain	Siemens Gamesa has implemented a cloud-based digital platform that enables real-time tracking of suppliers and inventory levels. Vestas has also invested in digital tools such as blockchain and artificial intelligence to improve supply chain visibility and efficiency.		
Increased geographic reach	Siemens Gamesa operates in over 90 countries and has a presence in emerging markets such as Latin America, India, and China. In contrast, Vestas operates in around 80 countries, with a stronger presence in Europe and North America.		

Detailed next

SOURCES: Team Analysis

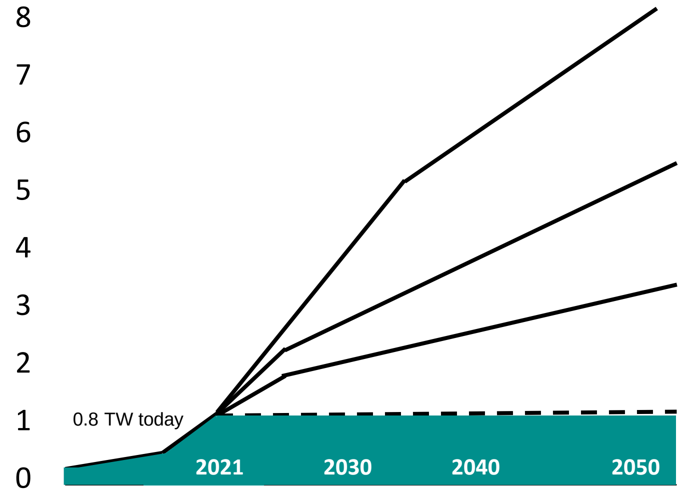
...And Where They Do (2/2)

SIEMENS

Increased geographical presence and increased market share would accrue lots of benefits like increased pricing power

__The wind generation market__ is projected to grow at a __fast pace...__

Global wind generation capacity scenarios (TW)



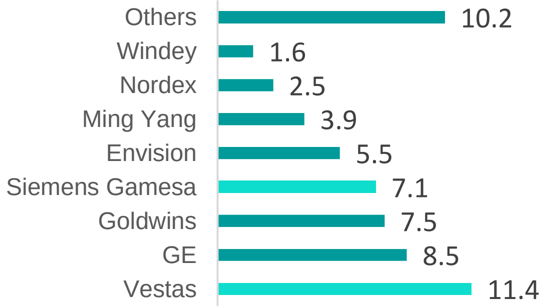
Net Zero
>240 GW annual installations

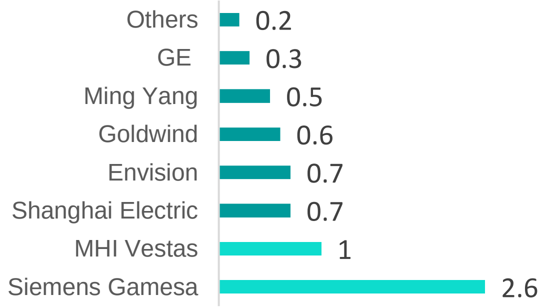
Announced Pledges
>215 GW annual installations

Stated Policies
>140 GW annual installations

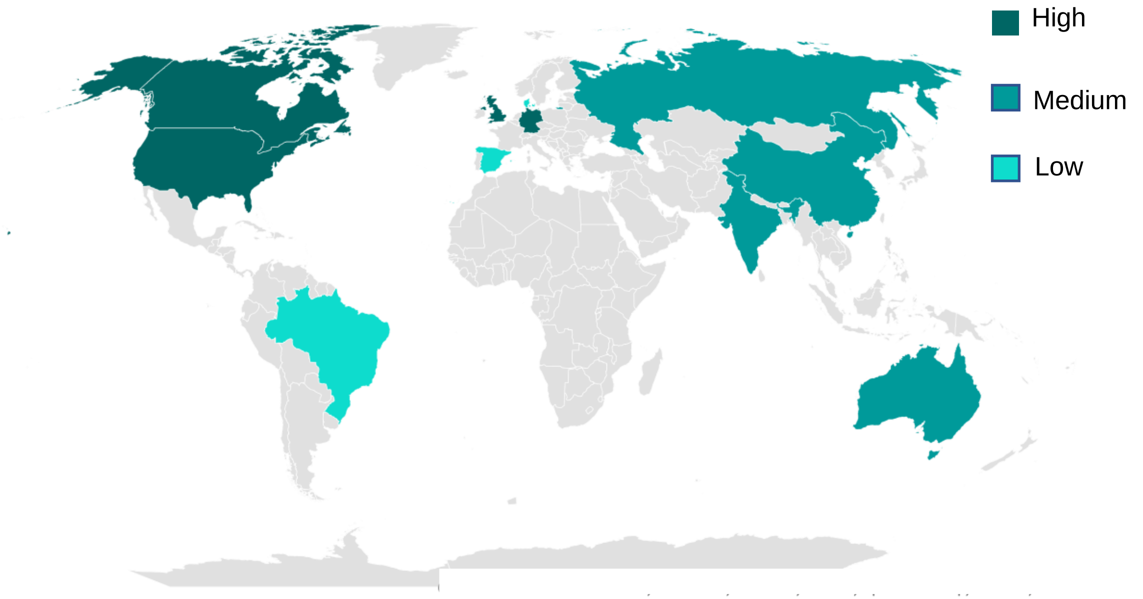
... and they hold a __dominant position__ in the most important segments

2019 Global (a) Onshore (b) Offshore Installations (GW)





With each company in __different markets, geographical diversification__ is achieved



Siemens	Vestas	Both

The combined entity will be dominant in both onshore and offshore and will be diversified across geographies. This will result in ....

↑ Bargaining power with suppliers ↑ Bargaining power with customers ↑ Pricing power.

SOURCES: IEA world energy Outlook 2022, Annual report

SIEMENS

FINANCIAL ANALYSIS

IV

Performed DCF and relative valuation of vestas on standalone basis and found that the market overvalues Vestas by 8%. Expected CAGR in revenues is 8.8% over the high growth period along with WACC of 7.35% which leads to intrinsic value of EUR 24.7 Bn. The capacity of synergy generation due to this acquisition is analyzed which results in synergy value of approximately EUR 9 Bn.

DCF

What is the intrinsic value of the business?

Computed in-depth fundamental analysis of the business's foundational elements, growth drivers, potential efficiency improvements, and scalability opportunities.
Utilized rationale-based forecasting techniques to estimate the intrinsic value of the business which comes out to be EUR 24.7bn which shows an overvaluation of 8% by the market

COMPARABLES

How is the market pricing similar businesses?

Selected a peer group of companies based on similarity of business model and maturity of industry. Computed various comparable ratios

The analysis shows Vestas to be slightly overvalued by the market (4% approx.)

SYNERGY

What is the value of synergies that can be generated?

Determined the crucial areas that stand to benefit from the acquisition and assessed the potential impact. Conducted a thorough estimate of the lifetime value of these benefits

The analysis shows that the acquisition of Vestas will generate synergies of EUR 8.62 bn

Financial Analysis – Revenue Drivers

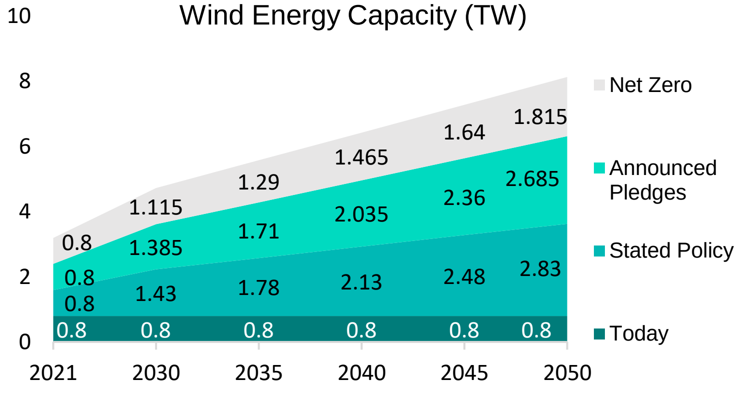
SIEMENS

Growth for Vestas will be driven primarily by government spending and expansion into offshore wind

Targets set by major governments

Government Impetus

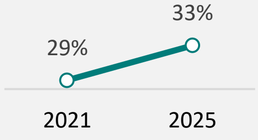
Wind Energy Capacity (TW)



China	India	Europe	USA
Renewable Energy Target Revision	Renewable Energy Target Revision	EU Renewable Energy Targets	Inflation Reduction Act

China

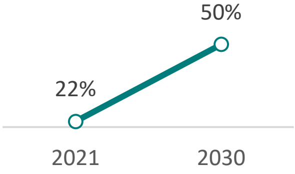
Renewable Energy Target Revision



18%
Energy generation from wind

India

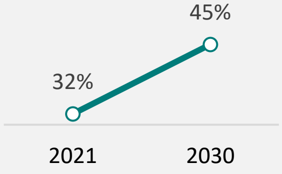
Renewable Energy Target Revision



Net Zero pledge by 2070

Europe

EU Renewable Energy Targets



Driven by
Russia – Ukraine crisis

USA

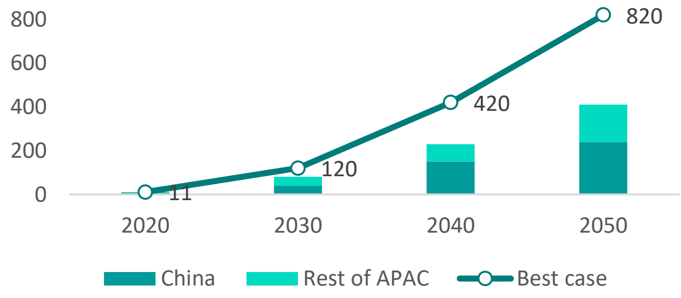
Inflation Reduction Act

- 10-year extension of the Production Tax Credit (PTC) and Investment Tax Credit (ITC)
- $369 billion over ten years to support renewable energy

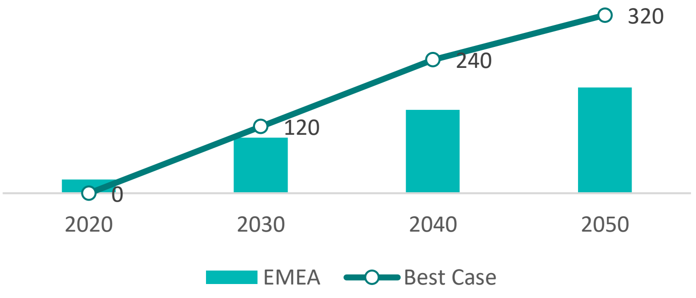
Forecasted Growth in Offshore Installations

Focus on Offshore Wind

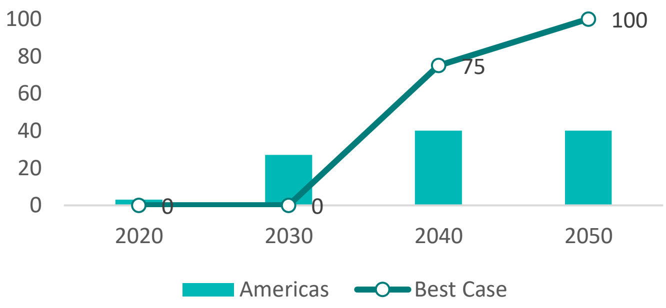
APAC Offshore Wind Installations (GW)



EMEA Offshore Wind Installations (GW)



Americas Offshore Wind Installations (GW)



SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), yahoo finance, google finance, bloomberg

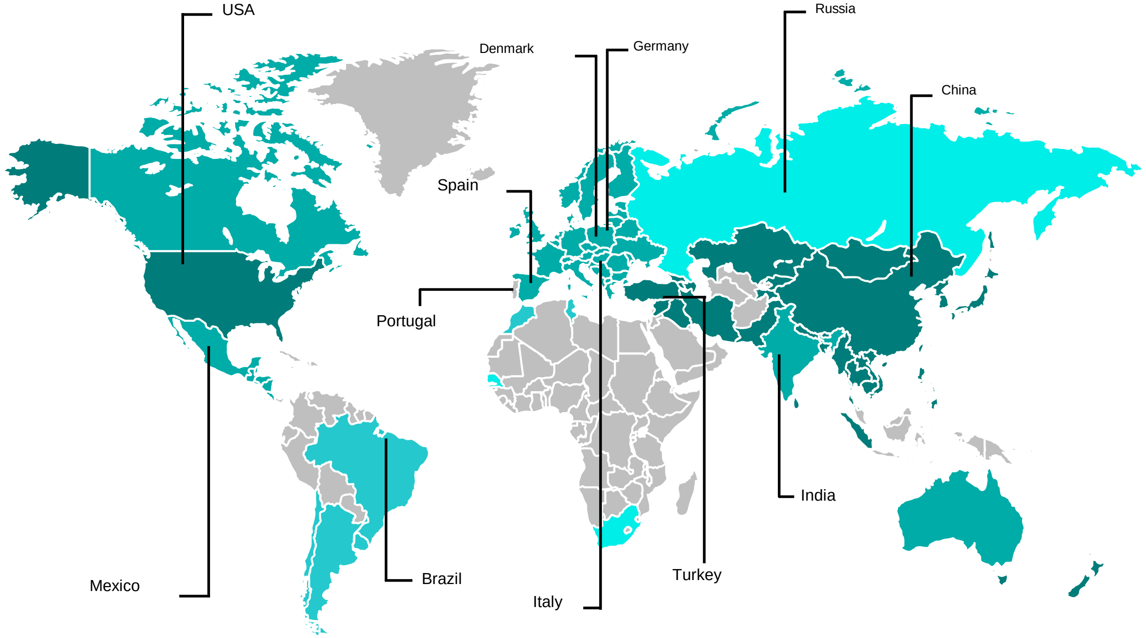
DCF Analysis – Revenue Assumptions

SIEMENS

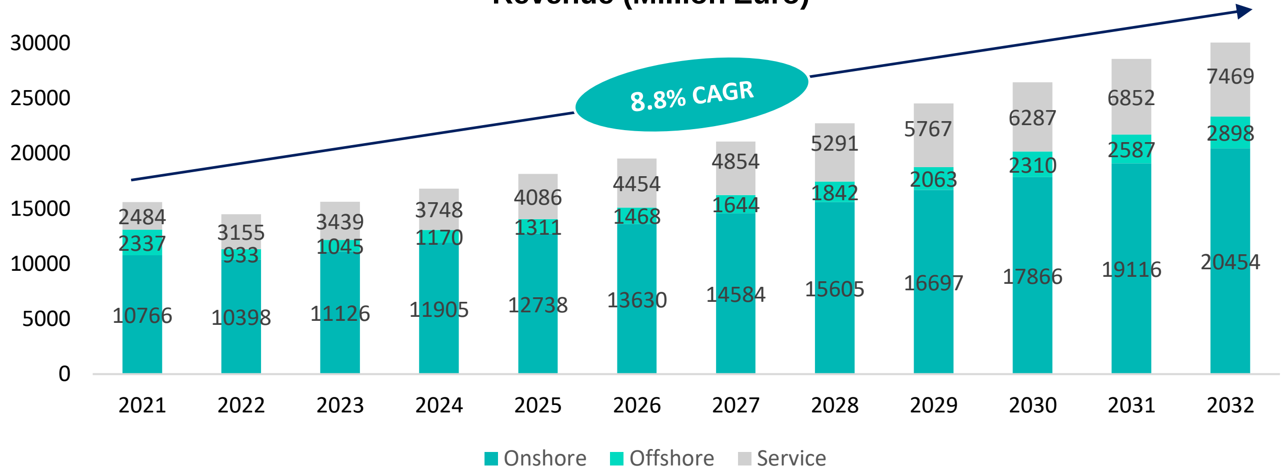
Growth is expected to be driven by government impetus, greater push into offshore wind and supply chain consolidation

New Installation Growth

Onshore	Offshore	Service
7% CAGR	**12% CAGR**	**9% CAGR**
Increase primarily driven by USA, Europe and Africa	Growth to accelerate post 2024, driven by new markets like USA and Asia Pacific	Power price increases and shortages will lead to higher need for optimization



Revenue (Million Euro)



- Revenue is expected to grow **by 8.8% CAGR** driven by increased order growth from government impetus
- **Extensive competition** from **Chinese turbine manufacturers** will likely dampen the competitive position
- Offshore wind is expected to at least quadruple by 2030, with significant growth arising post 2025
- Preferred supplier agreements are expected to create a strong base for revenue growth
- Revenue composition will change from **71% share of onshore wind in 2022 to 66% in 2032** while the **share of offshore wind** is expected to go from **6.5% in 2022 to 9.5% in 2032**. Service revenue is expected to go from 21.7% in 2022 to 24% in 2032.
- Revenue growth is expected to pick up pace post 2024 owing to a fall in expected inflation resulting in lower prices and a robust order flow

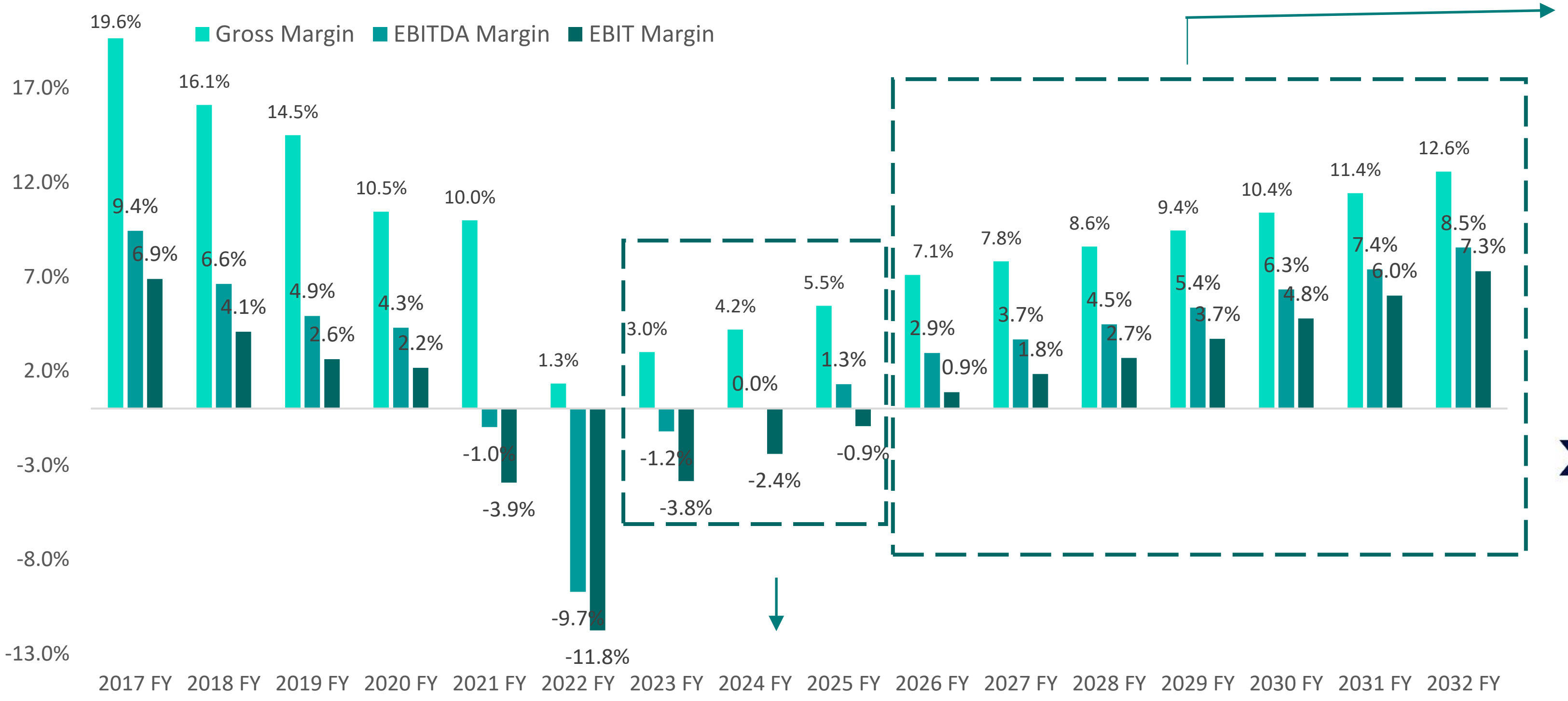
SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), yahoo finance, google finance**,** bloomberg

Financial Analysis – Cost Assumptions and Margin Expansion

SIEMENS

Vestas' gross margin projected to reach 12.6%, EBIT margin to reach 7.3% until 2032, which are in line with the margins in 18-19

Margin Expansion (Base Case)



	Pre-COVID averages 2017-2019	2022	2032
Gross margin	16.8%	1.3%	12.6%
EBITDA margin	7%	-9.7%	8.5%
EBIT margin	4.5%	-11.8%	7.3%

Vestas has an ambition to achieve revenue in the **Offshore business** area of **EUR +3bn by 2025**, with an EBIT margin on par with the Onshore business.

In the longer term, the Service EBIT margin is expected at a level of around 25 percent, taking into account the integration of the Offshore business, which currently generates lower margins than Onshore.

The **lower level of installations** is caused by **slow permitting processes in Europe** as well as **dampened activity levels in the USA** due to a steep ramp-up ahead of a busy 2024 driven by the **Inflation Reduction Act**. These factors are expected to turn into growth catalysts post 2024

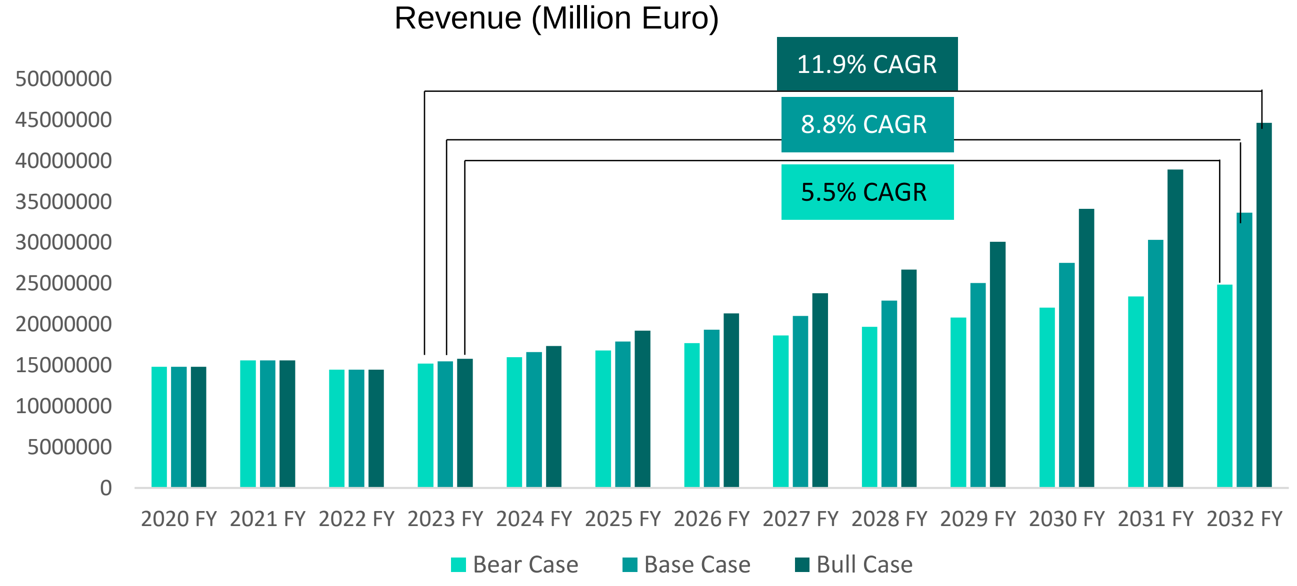
- **EBIT margins** are expected to **recover slowly** owing to reduction in inflation, **recovery in margins will remain strained until 2025**
- A 1.7% recovery in gross margins is expected in 2023 owing to cooling down of steel prices – the primary raw material in wind turbines
- Margin recovery is also expected due to **reduced impact of geopolitical crisis and COVID** induced supply chain disruptions
- The speed of recovery is slow in the initial 2 years i.e. as due to long lead times of projects and pre negotiation of rates, backlog projects will have to be serviced at a pre inflation price, leading to smaller profit margins.

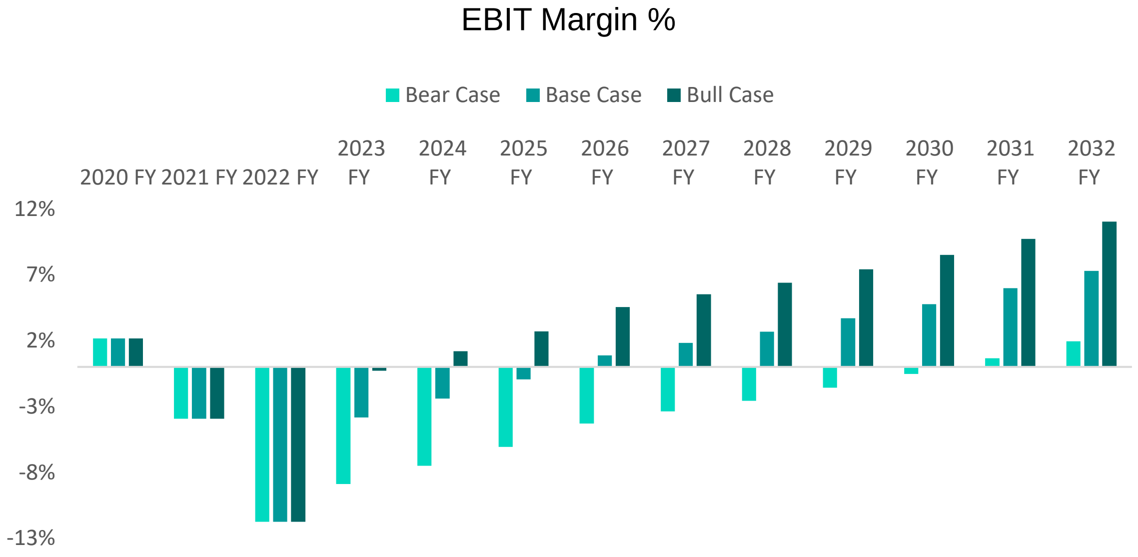
SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), yahoo finance, google finance, bloomberg

Financial Analysis – Multiple Scenario Analysis

SIEMENS

The scenario analysis conducted indicates a revenue CAGR range of 5.5%-11.9%, with corresponding EBIT margins from 2%-11%





Bear Case

- **Revenue** – Based on lower industry growth rates, decline in market hare, 3.3% CAGR lower than base case
- **COGS** – Assumed to be 4% higher as compared to base case, in case of higher inflation and supply chain issues
- **SG&A** – Taken at a 4%, a 2% markup on the historical average of 2% of revenue
- **R&D** – Taken at a 4.19%, a 2% markup on the historical average of 2.19% of revenue

Base Case

- **Revenue** – Based on management expectation of industry growth rates, market share resulting in a 8.8% CAGR
- **COGS** – Assumed to be in line with historical rates, declining by over 10% in the next 10 years owing to supply chain optimization and economies of scale
- **SG&A** – Taken on the historical average of 2%, with a P.A. decline of 0.01% of revenue
- **R&D** – Assumed to stay constant at 2.19% in line with past average

Bull Case

- **Revenue** – Based on higher than average industry growth and market share expectations resulting in a 11.9% CAGR
- **COGS** – Assumed to decline by over 13% in the next 10 years to 85% of revenue owing to a high degree of supply chain optimization and economies of scale
- **SG&A** – Taken at 1.5%, with a decline of 0.2% over the 10 forecasted years
- **R&D** – Assumed to be slightly below the historical average at 1.2%

SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), yahoo finance, google finance, bloomberg

Discounted Cash Flow Calculations & Sensitivity w.r.t. WACC and Terminal Growth

SIEMENS

Based on our Discounted Cash Flow (DCF) model, the implied share price of Vestas is ~ EUR 21

	2022 FY	2023 FY	2024 FY	2025 FY	2026 FY	2027 FY	2028 FY	2029 FY	2030 FY	2031 FY	2032 FY
EBIT	(962,000)	(750,278)	(598,995)	(392,541)	(144,882)	250,401	462,616	762,910	1,150,985	1,672,725	2,358,557
EBIT (1-t)	(673,400)	(525,195)	(419,297)	(274,779)	(101,417)	175,281	323,831	534,037	805,689	1,170,907	1,650,990
Capex	438,000	(223,457)	(712,654)	(674,067)	(761,833)	(847,903)	(595,761)	(675,713)	(605,593)	(667,787)	(758,820)
Depreciation & Amortisation	296,000	408,010	400,954	398,295	402,051	386,785	411,923	417,639	427,027	425,651	426,897
Change in Working Cap	463,000	(624,462)	275,954	18,714	201,301	484,930	322,169	28,178	463,419	507,726	575,777
FCFF	523,600	(965,104)	(455,043)	(531,837)	(259,897)	199,094	462,163	304,141	1,090,542	1,436,497	1,894,843
PV factor	1.000	0.932	0.868	0.808	0.753	0.701	0.653	0.609	0.567	0.528	0.492
PV of FCFF	523,600	(899,011)	(394,852)	(429,884)	(195,688)	139,641	301,954	185,102	618,259	758,618	932,144

Metric	**Perpetuity Model**	**Exit Multiple**	**Average**
PV of Cash flows	1,016,282	1,016,282	1,016,282
Terminal Value	41,947,103	53,698,304	47,822,704
PV of Terminal Value	20,635,339	26,416,191	23,525,765
Enterprise Value	21,651,621	27,432,473	24,542,047
Total Debt	2,179,000	2,179,000	2,179,000
Cash & Cash Equivalents	2,378,000	2,378,000	2,378,000
Equity Value	21,850,621	27,631,473	24,741,047
Number of Shares	1,030,000	1,030,000	1,030,000
Intrinsic Value per share	21	27	24

Perpetuity Growth rate	2.71%
Perpetuity WACC	7.35%

		Perpetuity Growth rate				
Price per Share	**21**	**1.71%**	**2.21%**	**2.71%**	**3.21%**	**3.71%**
WACC	**6.35%**	23	26	29	34	40
	6.85%	20	22	25	28	33
	7.35%	17	19	21	24	27
	7.85%	15	17	18	20	23
	8.35%	14	15	16	18	20

		Perpetuity Growth rate				
Equity Value	**21,850,621**	**1.71%**	**2.21%**	**2.71%**	**3.21%**	**3.71%**
WACC	**6.35%**	23,747,991	26,581,910	30,210,822	34,957,315	41,524,394
	6.85%	20,589,840	22,778,062	25,507,026	28,957,987	33,524,045
	7.35%	18,020,124	19,744,932	21,850,621	24,443,888	27,761,098
	7.85%	15,915,462	17,301,306	18,964,039	20,969,015	23,467,309
	8.35%	14,148,938	15,278,075	16,613,204	18,195,378	20,125,576

SOURCES: Team Analysis, Vestas' annual report (2022)

DCF Standalone - Summary

SIEMENS

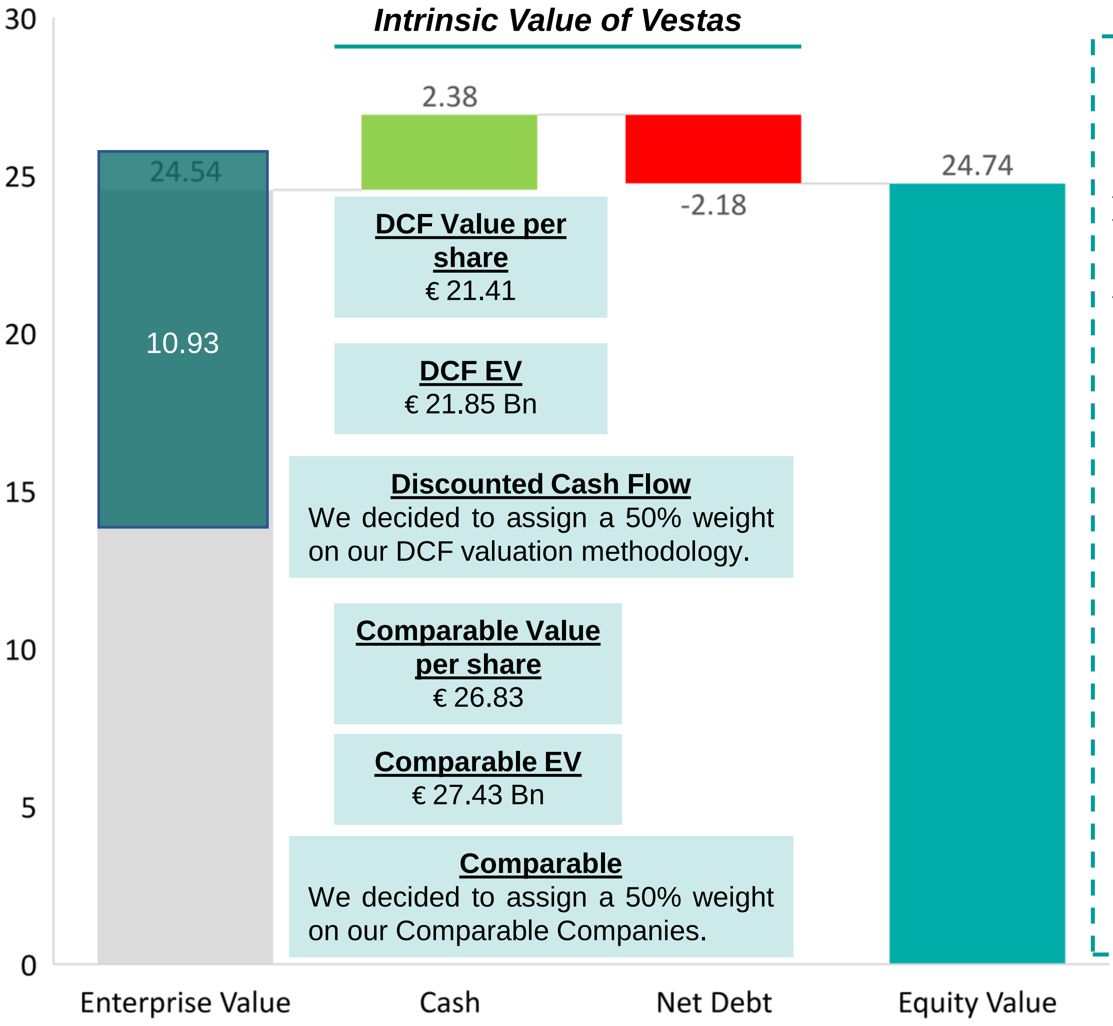
The intrinsic equity value of Vestas, which is calculated using a compound annual growth rate (CAGR) of 8.8% and a weighted average cost of capital (WACC) of 7.35%, comes out to be EUR 24.74 billion

WACC Calculation	
Cost of Equity	7.66%
Cost of Debt (B)	3.06%
Market Cap	2,98,53,000.00
Total Debt (Long term)	21,79,000.00
Equity/Capital Employed	0.93
Debt/Capital Employed	0.07
WACC	**7.35%**

Cost of Equity	
Risk Free Rate	2.71%
Beta	0.75
Equity Risk Premium (Mature Market)	5.49%
Country Risk Premium	1.09%
Cost of Equity	**7.66%**

Cost of Debt	
Yield of 10 year bond issued (Cost of debt A)	**3.06%**
Risk Free Rate	2.71%
Default Spread Germany	0%
Default Spread of Vestas	2.00%
Cost of Debt (B)	**3.3%**

Intrinsic Value of Vestas



DCF Value per share
€ 21.41

DCF EV
€ 21.85 Bn

Discounted Cash Flow
We decided to assign a 50% weight on our DCF valuation methodology.

Comparable Value per share
€ 26.83

Comparable EV
€ 27.43 Bn

Comparable
We decided to assign a 50% weight on our Comparable Companies.

Key Assumptions

As per our DCF, the intrinsic equity value of the company comes out to be EUR 24.74 bn which is due to the following **assumptions:**

- **Revenue CAGR** for next 10 years (High growth period) is **8.8%**
- After tax Cost of Capital **(WACC) is 7.44%**
- For calculation of **beta**, **bottoms up approach** has been used
- For **country risk premium**, weighted average (based on revenues) of the risk premiums of all the regions has been considered

SOURCES: Team Analysis, NYU Stern risk premiums (2023), yahoo finance

SIEMENS

DCF

What is the intrinsic value of the business?

Computed in-depth fundamental analysis of the business's foundational elements, growth drivers, potential efficiency improvements, and scalability opportunities.
Utilized rationale-based forecasting techniques to estimate the intrinsic value of the business which comes out to be EUR 24.7bn which shows an overvaluation of 8% by the market

COMPARABLES

How is the market pricing similar businesses?

Selected a peer group of companies based on similarity of business model and maturity of industry.
Computed various comparable ratios

The analysis shows Vestas to be slightly overvalued by the market (4% approx.)

SYNERGY

What is the value of synergies that can be generated?

Determined the crucial areas that stand to benefit from the acquisition and assessed the potential impact.
Conducted a thorough estimate of the lifetime value of these benefits.
The analysis shows that the acquisition of Vestas will generate synergies of EUR 8.62 bn

Selection Of Peer Group

SIEMENS

Based on our analysis, Wind Energy is the only peer group that should be retained given its CAGR, revenue & cost drivers

	Market size	CAGR	Biggest revenue drivers	Biggest cost drivers	Retained?
Vestas		12.7 %	• Consistency ✓ • Flexible locations ✓ • Zero Carbon solutions ✓ • Others ✓	• Installation ✓ • Grid Connection ✓ • Permission & Regulatory ✓ • Maintenance ✓	
Solar Energy	€ 157.7 billion	12.7 %	• Consistency ✗ • Flexible locations ✗ • Zero Carbon solutions ✓ • Others ✓	• Installation ✓ • Grid Connection ✓ • Permission & Regulatory ✗ • Maintenance ✓	✗
Hydroelectricity	€ 282 billion	1.9 %	• Consistency ✓ • Flexible locations ✗ • Zero Carbon solutions ✓ • Others ✓	• Installation ✓ • Grid Connection ✗ • Permission & Regulatory ✓ • Maintenance ✓	✗
Wind Energy	€ 67 billion	8.3 %	• Consistency ✓ • Flexible locations ✓ • Zero Carbon solutions ✓ • Others ✓	• Installation ✓ • Grid Connection ✓ • Permission & Regulatory ✓ • Maintenance ✓	✓
Coal	€ 607 billion	3.2 %	• Consistency ✓ • Flexible locations ✓ • Zero Carbon solutions ✗ • Others ✓	• Installation ✓ • Grid Connection ✗ • Permission & Regulatory ✓ • Maintenance ✗	✗

SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), bloomberg

Company Comparison - Takeaways

SIEMENS

Analyzing financial multiples of selected companies operating in the Wind Energy space gives us a median EBITDA margin of 7%.

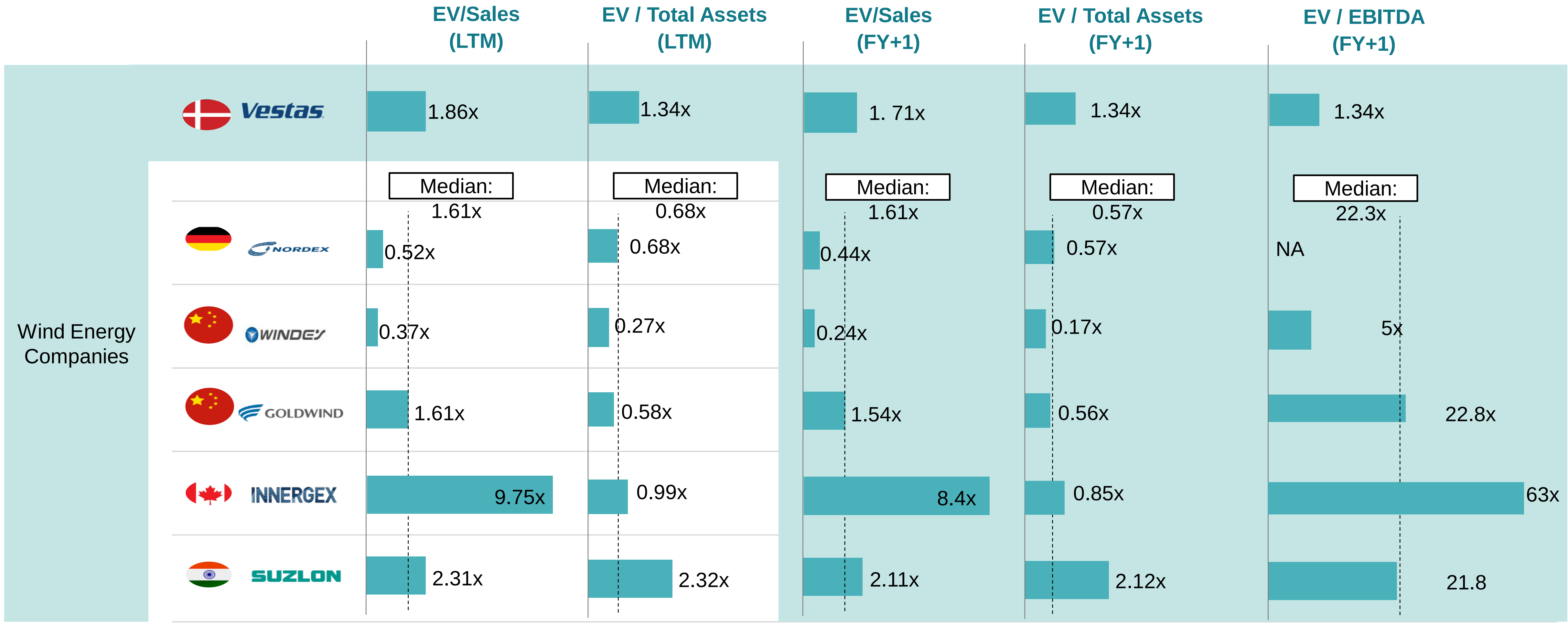
Wind Energy Companies	Short description and rationale	Revenue CAGR 2022	EBITDA margin 2022	Net income margin 2022
Vestas	• **Leading Player** in manufacturing **Onshore** and **Offshore wind turbines** • Innovative Technology and Global Presence	6%	-6.6%	-6.7%
		Median: 16%	Median: 7%	Median: -3%
NORDEX	• Wind & solar farms, hydroelectric facilities, & storage solutions • Designs, develops, & manufactures wind turbines	17.7%	-7.4%	-9.3%
WINDEY	• Designs, & manufactures wind turbines • High quality & competitive pricing along with customized solutions	52.5%	4.9%	3.3%
GOLDWIND	• Leading player in manufacturing wind turbines globally • Specializes in onshore & offshore wind systems	3.9%	6.8%	6%
INNERGEX	• Hydroelectric, wind, solar & storage facilities. • Among the Leading market players in the American continent	16%	13.3%	-10%
SUZLON	• Renewable energy solutions covering the entire spectrum of wind energy • End-to-End solutions, Best-In-Class Services	9.4%	9.7%	-3.1%

SOURCES: Vestas' annual report (2022), team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), bloomberg

Financial Analysis Of Peers

SIEMENS

The value of Vestas stands fair to slightly overvalued based on the median values of EV multiples of the selected peer group



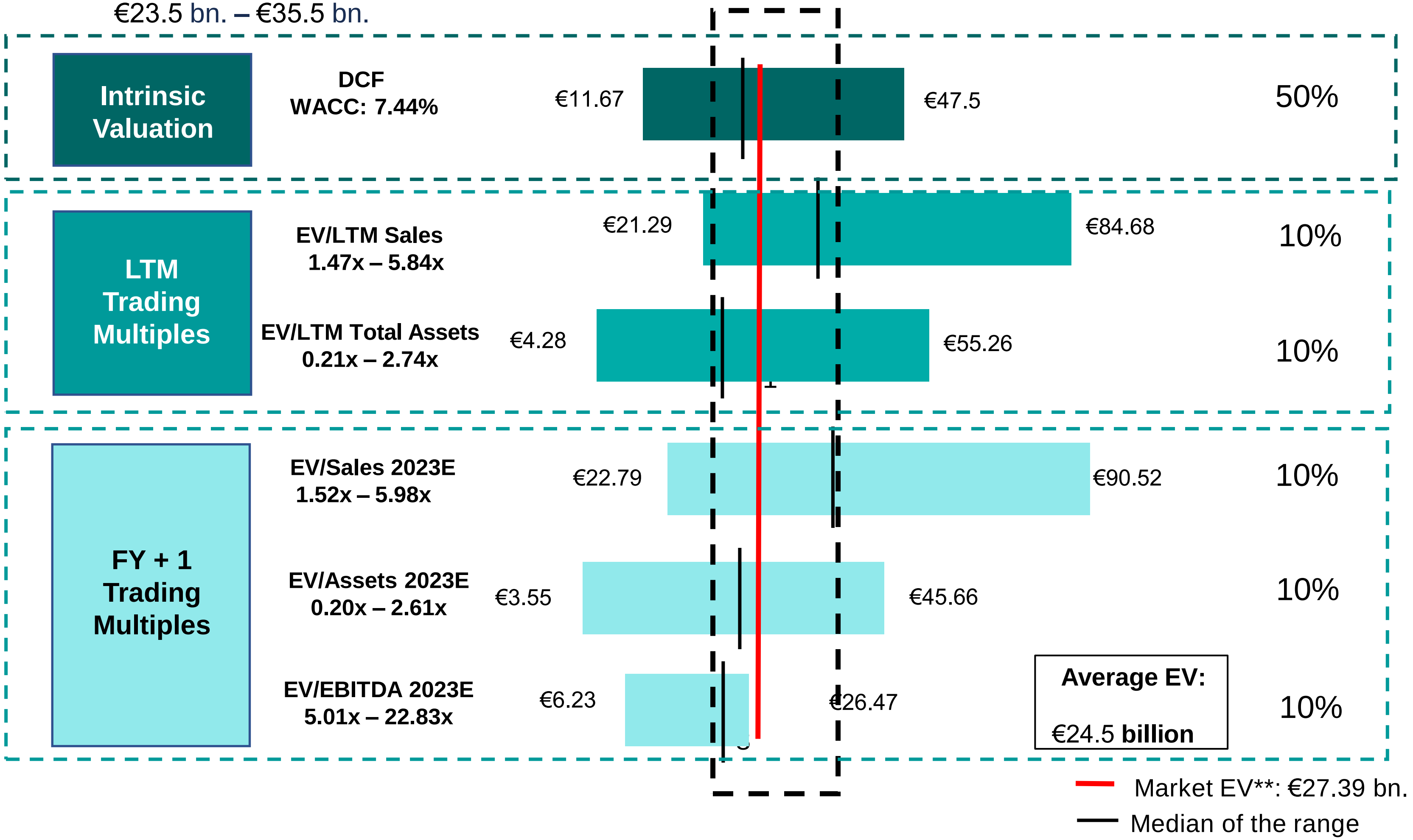
SOURCES: Team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), bloomberg

Valuation Summary

SIEMENS

As of March 8th, 2023, the enterprise value of Vestas Wind Systems in the market is EUR 27.2 billion, which represents an overvaluation of 8% when compared to the company's fundamental value

Estimated EV Range: €23.5 bn. – €35.5 bn.



Key takeaways

- According to the **discounted cash flow (DCF)** valuation method, Vestas' base case value is **EUR 22 billion**, while its market value is EUR 27 billion. This indicates that the market is **overvaluing the stock by 15%**
- The **negative LTM EBITDA** for Vestas is attributed to several macroeconomic factors, including **rising inflation rates, supply chain disruptions** due to **COVID-19,** and the ongoing **Russia-Ukraine** conflict. These challenges have resulted in significant **value destruction** for the company, and it is likely to continue facing low profitability for several years to come
- Both ranges indicate that Vestas Wind Systems is currently **fairly valued to slightly overvalued**
- After **factoring in weights**, the intrinsic value of Vestas comes out to be **EUR 24.5 billion**. However, even with this adjusted value, the stock remains **overvalued by 8%** when compared to the market.

SOURCES: Team analysis based on multiples and analyst forecasts from S&P Global Market Intelligence (2023), bloomberg

SIEMENS

DCF

What is the intrinsic value of the business?

Computed in-depth fundamental analysis of the business's foundational elements, growth drivers, potential efficiency improvements, and scalability opportunities.
Utilized rationale-based forecasting techniques to estimate the intrinsic value of the business which comes out to be EUR 24.7bn which shows an overvaluation of 8% by the market

COMPARABLES

How is the market pricing similar businesses?

Selected a peer group of companies based on similarity of business model and maturity of industry. Computed various comparable ratios

The analysis shows Vestas to be slightly overvalued by the market (4% approx.)

SYNERGY

What is the value of synergies that can be generated?

Determined the crucial areas that stand to benefit from the acquisition and assessed the potential impact. Conducted a thorough estimate of the lifetime value of these benefits.
The analysis shows that the acquisition of Vestas will generate synergies of EUR 8.62 bn

Synergy Analysis: Siemens & Vestas

SIEMENS

Primary impact on 2 business segments of Vestas – Turnkey project development & service, along with SG&A & margin expansion

	Type of Synergies	Siemens AG	Vestas	Degree of business overlap	Degree of impact	Ease of quantification	Rationale
Segment wise synergies	Production and manufacturing cost	Digital Industry	Onshore Wind Offshore wind Service				IOT and 5G infrastructure as well as automation capabilities to optimize production
Segment wise synergies	Vertical integration	Smart Infrastructure	Onshore Wind Offshore wind Service				Grid optimization infrastructure to provide end to end renewable energy infrastructure
Segment wise synergies	No significant synergy	Healthineers	Onshore Wind Offshore wind Service				Siemen's Healthineers focuses on AI and robotics driven healthcare solutions
Segment wise synergies	No significant synergy	Mobility	Onshore Wind Offshore wind Service				Mobility focuses on rail infra solutions and turnkey projects with little to no overlap with Vestas's business model
Organizational synergies	Selling, general and administrative expenses	Executive, employee compensation, selling and marketing expenses	Consolidation in administration, human resource				Consolidation of admin tasks such as accounting, finance, marketing in terms of employees and office space
Organizational synergies	Research and Development	Software solutions under digital industry	Creation of a strong digitization base for service segment				Combined development of industrial software used to strengthen Vestas's service offering

Synergy Analysis Breakdown (1/2) – Revenue Synergies

SIEMENS

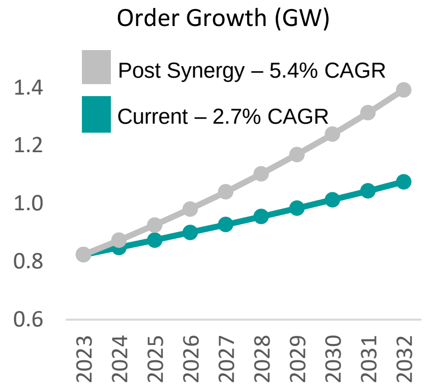
Growth driven in Project development and Service segment due to increased pricing power and order growth

Vertical integration -

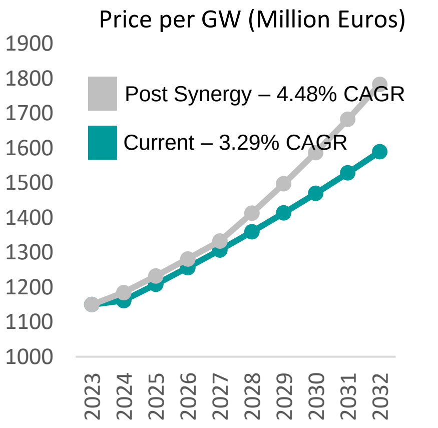
- Electrification portfolio making grids more resilient, flexible and efficient. Its offerings cover grid simulation, operation and control software
- Bundling of services - wind turbine installation and grid optimization, Increase in number of turnkey projects driven by a more diverse service mix

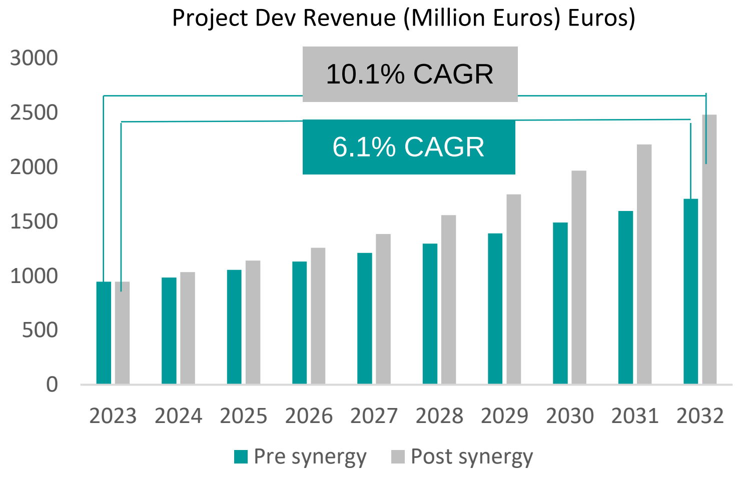
Project Development Segment – turnkey projects in both onshore and offshore wind

- Increase in turnkey order quantity owing to end to end service offering
- Competitive edge due to Siemens's expertise in renewable energy distribution.
- **2.7% additional CAGR**



- Increased pricing power due to a more Diverse service mix
- Turnkey projects grant more pricing flexibility owing to order customization – better possible with Siemens's energy management infra
- **1.2%** additional CAGR

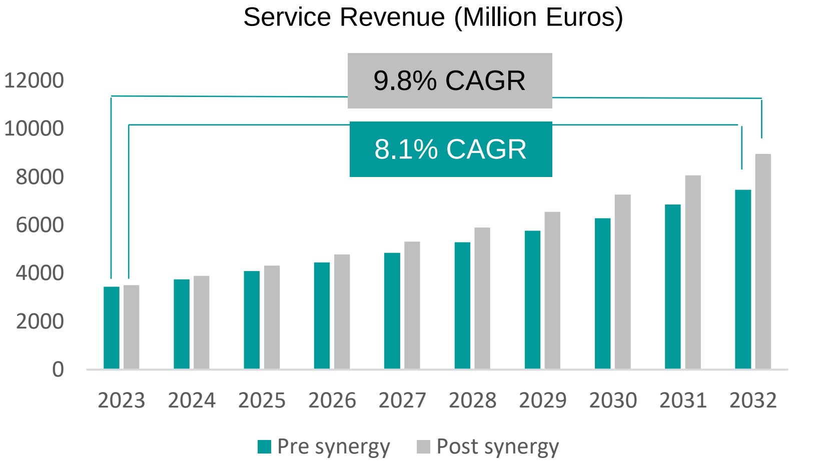




- Higher pricing and order growth driven by Siemen's supplementary product mix
- **An accretive CAGR of 4%** created above the pre synergy case owing to competitive position strengthening and larger customized turnkey projects
- Use of Siemens's client contacts to access a host of new renewable project offerings driving a accretive revenue, pricing and order growth

NPV 237.5 Million Euros (post tax operating income)

Service Segment



- Service revenue primarily driven by synergies created in servicing a larger portion of the energy supply chain from power generation to power transmission
- **An accretive CAGR of 1.7%** driven by greater bargaining power owing to Siemens's brand name, easier product differentiation from competitors and greater suit of services
- Ability to add a new service dimension to existing service contracts, unlocking greater value

NPV 541.5 Million Euros (post tax operating income)

SOURCES: Team Analysis

Synergy Analysis Breakdown (2/2) – Cost Synergies

SIEMENS

Gross margin expansion and SG&A savings through consolidation and leveraging Siemens's technological capital

Synergy Driver

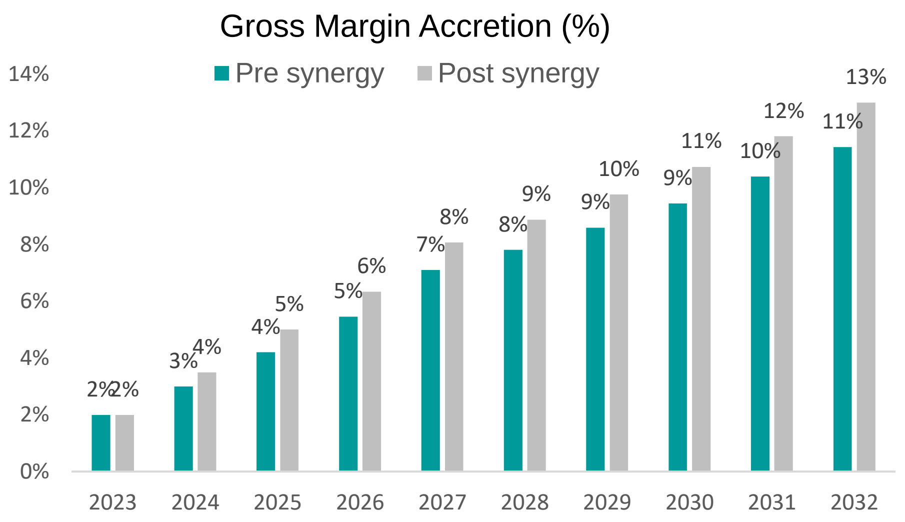
Siemens Digital Industry

Duration of Synergy

2025 – 2031
2 years required for integration

Cost of Implementation

5% of total synergy benefit created, deducted as cost of implementation



- Siemens through its digital industries division is a **pioneer of IoT, 5G technology** using platforms such as MindSphere
- Siemens through its Siemens X-celerator also has access to **digital marketplaces for B2B connections** and IoT enabled hardware
- Leveraging Siemens's expertise in this sphere will result in **optimization of raw material supply, manufacturing operations, progress tracking** and **identification of KPIs**
- It is expected to take **2 years** post the acquisition for these benefits to accrue due to time intensive hardware and capital assets overhaul required
- It is expected that automation benefits will result in **Gross margin accretion of 3%** in 2032 guided by cost reduction in production, raw material acquisition, labour costs.

Synergy Impact

NPV – 4.676 Billion Euros

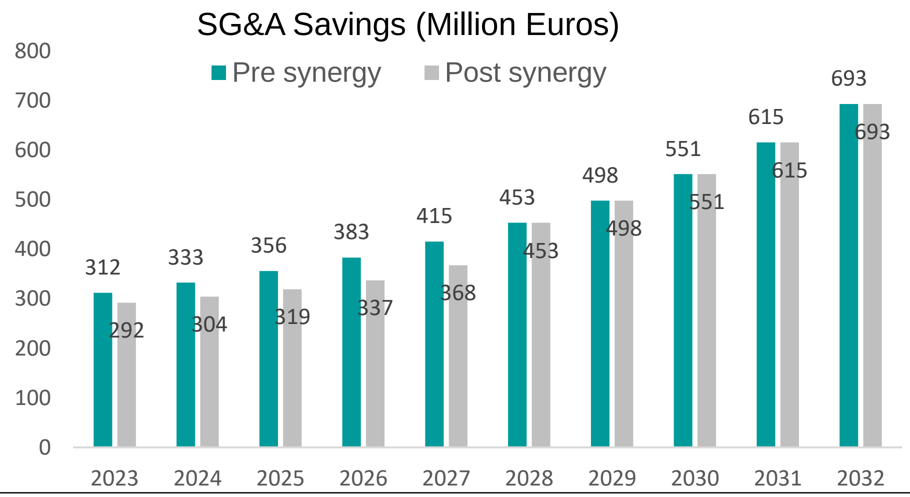
Synergy Driver

SG&A, Human resource consolidation

Duration of Synergy

2023 – 2027
5 years required for complete workforce and administrative consolidation

Cost of Implementation



- **Consolidation of administration functions** like accounting, finance, marketing under one head instead of operating separate departments for both the companies
- Reduction in administrative employees, office space requirement and marketing spend of Vestas
- **Reduction of the workforce** by 10% over a period of 5 years, reduction in lease requirements and SG&A expenditure by 5%
- **Cost of implementation** includes severance packages awarded to employees, moving costs, and other consolidated costs assumed to be 20% of the created synergy value.
- **Value of severance** is calculated based on 2 weeks of pay for every year worked with the company, average time worked is assumed as 10 years, resulting in three month's pay.

Synergy Impact

NPV – 138.2 Million Euros

SOURCES: Team Analysis

DCF with Synergy (Base Case)

SIEMENS

Max payable share price taking into account synergies = 32 Euros, Actual price = 35.9 Euros, Loss of 3.67 Billion Euros

Post synergy free cash flow computation (Million Euros)

	2022 FY	2023 FY	2024 FY	2025 FY	2026 FY	2027 FY	2028 FY	2029 FY	2030 FY	2031 FY	2032 FY
EBIT	-962	-729	-481	-196	103	557	792	1182	1686	2358	3239
EBIT (1-t)	-673	-510	-337	-137	72	390	554	827	1180	1651	2268
Capex	438	-223	-713	-674	-762	-848	-596	-676	-606	-668	-759
Depreciation & Ammortisation	296	408	401	398	402	387	412	418	427	426	427
Change in Working Cap	463	-624	276	19	201	485	322	28	463	508	576
FCFF	524	-950	-372	-394	-87	414	692	597	1465	1916	2511
PV factor	1.00	0.93	0.87	0.81	0.75	0.70	0.65	0.61	0.57	0.53	0.52
PV of FCFF	524	-885	-323	-319	-65	290	452	364	831	1012	1305

Maximum price analysis

Metric	Perpetuity Model	Exit Multiple	Average
PV of Cash flows	2,662	2,662	2,662
Terminal Value	63,674	53,698	58,686
PV of Terminal Value	33,094	27,909	30,501
Enterprise Value	35,756	30,571	33,164
Total Debt	2,179	2,179	2,179
Cash & Cash Equivalents	2,378	2,378	2,378
Equity Value	35,955	30,770	33,363
Number of Shares	1,030	1,030	1,030
Intrinsic Value per share	**35**	**30**	**32**

Cost of Equity	Value
Risk Free Rate	2.71%
Beta	0.96
Equity Risk Premium (Mature Market)	5%
Country Risk Premium	1%
Cost of Equity	9%

Cost of Debt	Value
Yield of 10 year bond issued	3.06%
Risk Free Rate	2.71%
Default Spread Germany	0%
Default Spread of Vestas	2.00%
Cost of Debt	3.298%

Combined firm	
Debt to total capital	0.396
Equity to total capital	0.6035
Perpetuity Growth rate	2.71%
Perpetuity WACC	6.76%

Unlevered beta	0.659
Levered Beta	0.961

Beta unlevered and then **relevered at the post acquisition Debt to Equity ratio** to adequately reflect the additional risk undertaken to achieve these synergies

SOURCES: Team Analysis

Purchasing Price VS Value of Vestas

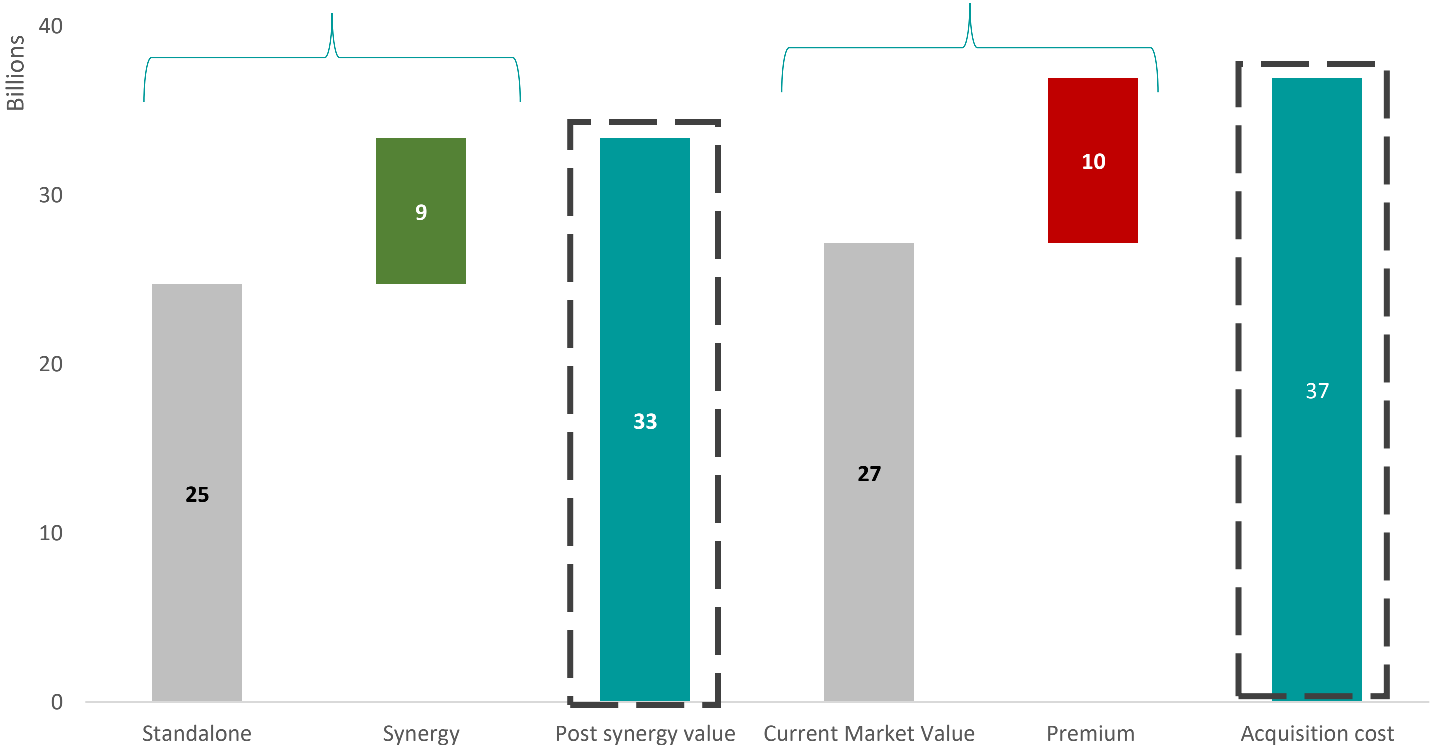
SIEMENS

Siemens AG would lose around EUR 8.54bn on the acquisition after accounting for the synergies achieved and the premium paid over and above Vestas' current market capitalization that is required to convince the shareholders

The price to be paid to Vestas is ***significantly higher than its total value to Siemens AG***

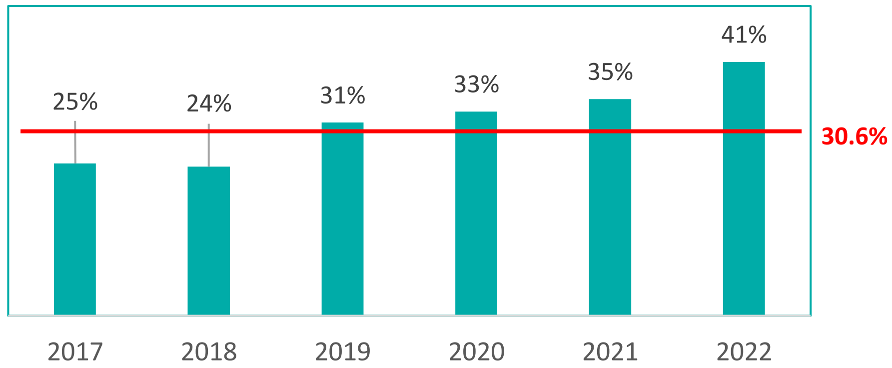
Synergy value created and discounted using relevered beta based WACC

Synergy value created and discounted using relevered beta based WACC



Maximum price that can be paid = 32 Euros/Share vs max required to be paid = 35.9 Euros

M&A Deal Premium Average



1. A recent **increase in acquisition premiums** can be explained by the high growth in the economy after the pandemic lows, which makes it important for the companies to adapt to the new threats posed and take benefit from the opportunities highlighted.

2. BCG has reported a **long-term industry average of 30.6**%

3. **Iberdrola Renewables** acquired **Infigen Energy Ltd**. for an Equity Value of **$ 634 million** which implied a **premium of 45.8%** to Infigen's unaffected share price before the announcement

SOURCES: Team Analysis, S&P Capital IQ Pro, BCG

ACQUISITION FEASIBILITY

We suggest a full buyout of Vestas - 15% of the deal to be financed using cash. This will help maintain adequate quick and cash ratios for strong liquidity post acquisition. 85% of the acquisition financed using debt after considering impact of credit rating and EPS accretion/dilution.

An Improvement in ESG factors to be seen post acquisition, however there is a concern regarding employee layoffs. Moreover, the acquisition is not feasible given the impact on HHI it has in European and US Markets. There are high chances of anti-trust issues. Increased Forex risk can be countered by borrowing in the local market, using Currency Baskets and Deal-Contingent Forwards.

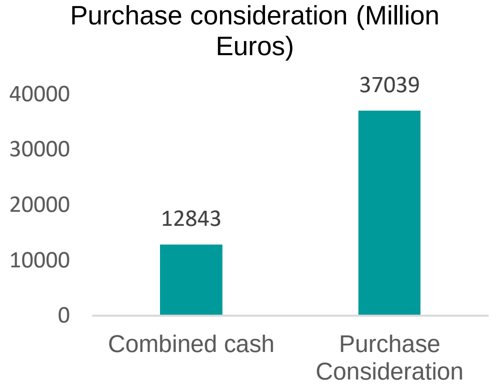
Deal Structure (1/2)

SIEMENS

15% of the deal to be financed using cash, while maintaining adequate quick and cash ratios for strong liquidity post acquisition

Assessment of fund sources

Preference for use (based on cost)	Cost of funds	Cost calculation metric
1 - Cash	**1.89%** (After tax)	Opportunity cost – if money is not used for acquisition it will earn a post tax risk free rate
2 - Debt	**2.76%** (After tax cost of raising debt to finance the transaction)	Based on the risk free rate plus Siemens's default spread as per their credit rating
3 - Equity	**3.48%** (Yield on equity)	Net income divided by market cap – giving us the yield on equity, which is yield foregone on issuing equity



Inadequate cash to complete an entire cash transaction
34.8% of the transaction can be financed using cash

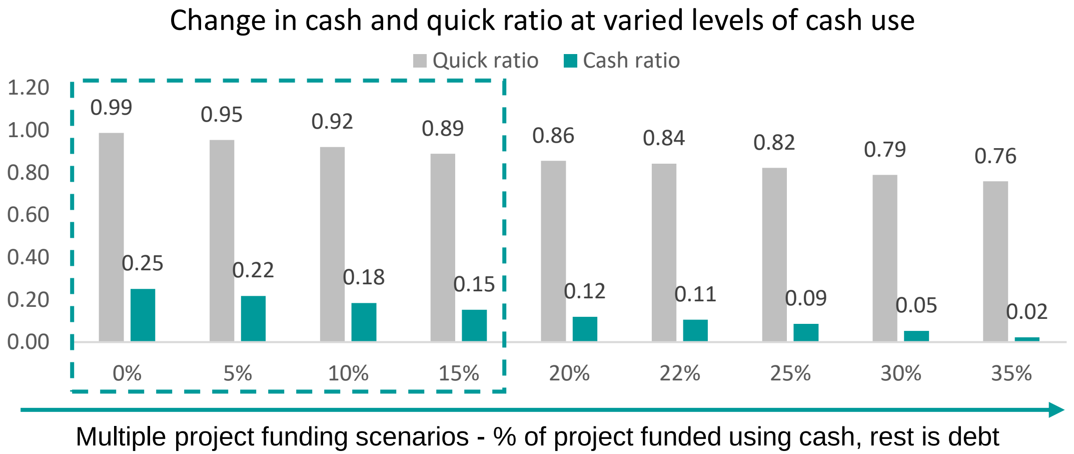
Hence we explored alternate means of funding based on their opportunity cost and interest cost.

Assessment of the maximum possible use of cash – while maintaining minimum liquidity requirements

Competitor Ratios	Lowest	Highest	Average
Cash Ratio	0.146x	0.97x	0.493
Quick Ratio	0.716x	1.75x	1.162

Minimum Cash ratio to be maintained for the combined firm in order to maintain functional = **0.15**

Minimum Quick ratio to be maintained for the combined firm = **0.72**



- Maximum cash that can be used is **15%** of the deal value.
- As using more cash would **dilute our liquidity position** beyond the lowest industry margin levels.

SOURCES: Team Analysis

Deal Structure (2/2)

SIEMENS

85% of the acquisition financed using debt after considering impact of credit rating and EPS accretion/dilution.

Determination of Debt use percentage

- Raising this debt will result in a demotion of Siemens's rating from **A1 to A2**, resulting in an **increase in debt costs** by **190 basis points**
- If interest coverage ratio goes below **4.25x** it will result in further demotion in the credit rating of Siemens from **A2 to A3** and an increase in the interest costs by another **200 Basis points.**

Deal Structure Chosen

Cash	Debt	Cost of debt	Cost of cash	WACC
15%	85%	2.9%	1.89%	2.74%

Post acquisition – 100% of Vestas owned by Siemens shareholders

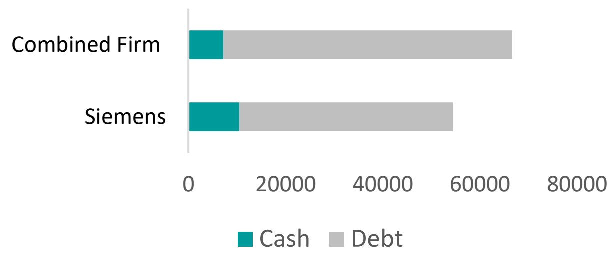
Cash Usage Scenarios	0%	5%	10%	15%	20%	22%	25%	30%	34.6%
Cash Used	0.00	1,851,954	3,703,908	5,555,862	7,407,816	8,148,598	9,259,771	11,111,725	12,843,000
Debt Used	37,039,084	35,187,130	33,335,176	31,483,221	29,631,267	28,890,486	27,779,313	25,927,359	24,196,084
Interest (at combined effective rate)	1,022,056	970,954	919,851	868,748	817,645	797,204	766,542	715,440	667,667
Existing Debt Interest Payment	1,738,624	1,738,624	1,738,624	1,738,624	1,738,624	1,738,624	1,738,624	1,738,624	1,738,624
Interest Coverage ratio	4.35	4.43	4.52	4.61	4.70	4.74	4.80	4.90	4.99
Cost of raising debt	4.13%	4.13%	4.13%	4.13%	4.13%	4.13%	4.13%	4.13%	4.13%
After tax cost	2.892%	2.892%	2.892%	2.892%	2.892%	2.892%	2.892%	2.892%	2.892%
Weighted average cost of funds	2.89%	2.84%	2.79%	2.74%	2.69%	2.67%	2.64%	2.59%	2.55%

Debt too expensive

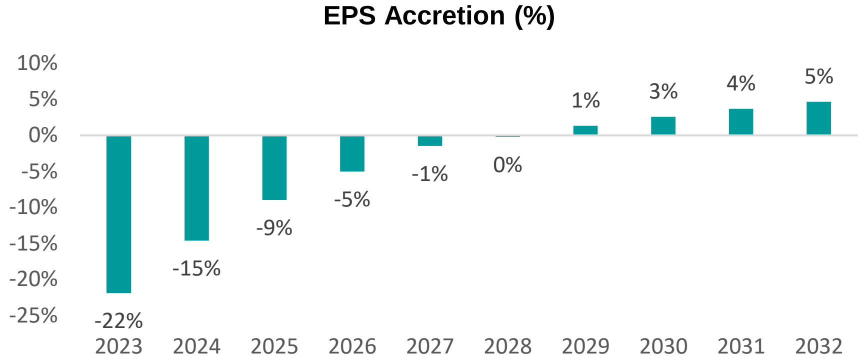
Too much cash dilution

Post Acquisition – EPS Dilution due to low yield on Vestas's equity, change in Debt/EBITDA and Interest coverage ratios

Siemens has **ample debt raising capacity** as post acquisition the **debt to EBITDA** ratio will become **4.35x** which is similar to the comparable company average of **4.33x**. Siemens will also have **interest coverage ratio accretion** to **5.71x** which portrays a strong financial position. Hence Siemens is well positioned to finance **70%** of the transaction with debt



Debt/EBITDA	3.37x	→	4.35x
Interest coverage	5.16x	→	5.71x



Cost of funds	Yield on Vestas's equity
2.74%	-3.93%

As the yield on Vestas' equity is lower than the cost of funds used for the acquisition, it will lead to EPS dilution for the first 5 years

SOURCES: Team Analysis

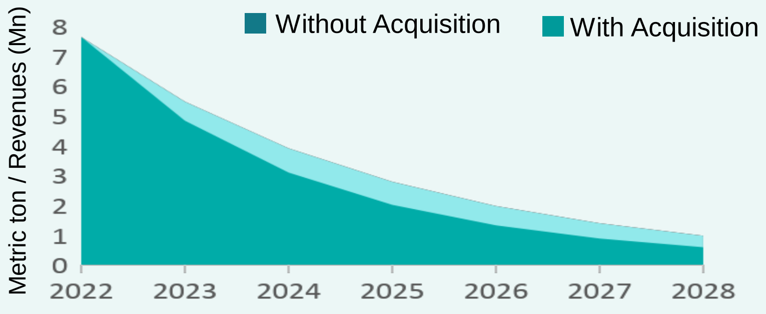
ESG Impact of the Deal

SIEMENS

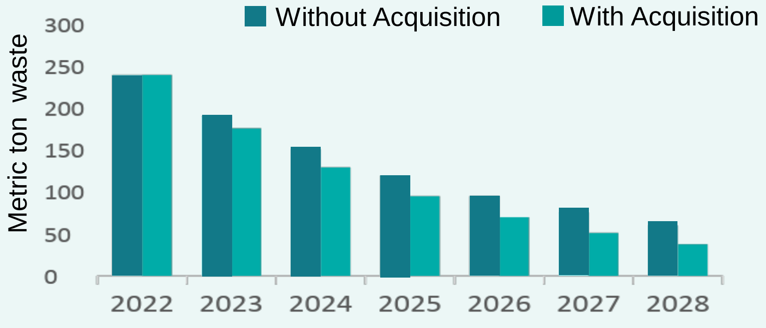
Improvement in ESG factors to be seen post acquisition, however a concern regarding employee layoffs might arise

Environmental

1) Reduced **Greenhouse Emissions Intensity (CO2e emissions / Revenues** due to more efficient technology



2) Efficient **Waste Management** due to optimised operations



3) Circularity through waste-to-landfill reduction and toward zero landfill waste

Social

1) **Employees**

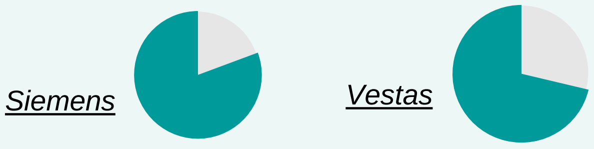
i) Goals achieved:

- Empowering employees to enhance their skills, knowledge, and expertise
- Increased digital learning hours
- Increased access to employee assistance program

ii) **Concern:**

- **Employee Layoff** due to consolidation of business processes and management post-merger

(iii) Siemens has a commitment to achieving equity in workforce participation with **30% female share in top management** by 2025. This acquisition is another step toward the same



2) **Customers**

(i) The merger of the companies R&D efforts can lead to the creation of **cost-effective, cutting-edge solutions** that better meet the needs of customers.

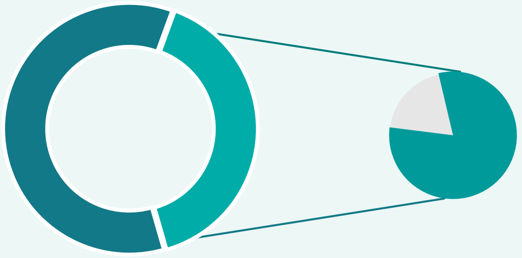
Governance

1) **Cross company sharing** of policies integrating sustainability into the compensation across-company

Siemens has a Long-term variable compensation scheme that comprises 40% of total target compensation, with 20% tied to an internal ESG/Sustainability index dependent on -

ESG factors:

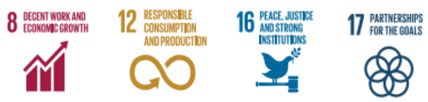
- reduction of CO2 emissions
- Digital learning
- NPS



2) Development of ESG secured supply chain based on supplier commitment to the supplier code of conduct

3) Increased board room diversity facilitating better decision making

Sustainability Goals addressed



SOURCES: Team Analysis, Annual Report, Sustainability Report (Siemens & Vestas)

Ownership Structure & Regulatory Concerns

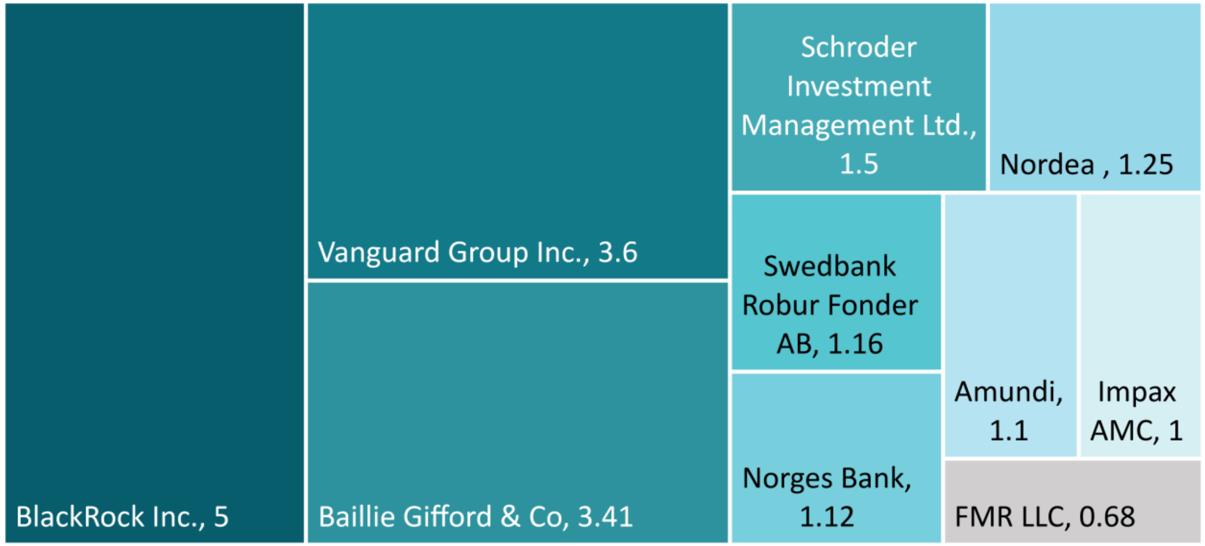
SIEMENS

Highly fragmented holdings make the acquisition a bit easier, but significant regulatory concerns remain a major obstacle

Highly fragmented holdings

-- The **top 10** institutional holders hold mere **20%** of the company. The Public Holds around **64%**
-- This makes it easy for the deal to be negotiated

Top 10 Shareholders Collectively hold less than 14% of O/S Stocks



Common Institutional Holdings

Blackrock, Vanguard and Norges Bank are common stakeholders that hold a significant stake in both Vestas and Siemens – hence integration can be easy

Impact

Regulatory concerns

1. Antitrust concerns
European Union's Competition Directorate closely scrutinize the acquisition to ensure it does not harm market competition.

HHI Score	Pre Merger	Post Merger	Increase
Europe	2099	3607	1508
America	2656	7065	4409

HHI<1,500; Low Concentration
HHI<2,500; Moderate Concentration
HHI>2,500; High Concentration

HHI score is a measure of market concentration.
Post the merger the market concentration would be extremely high, which means huge scrutiny by the Competition Directorate, and this acquisition won't go through.

Precedent:
Siemens' proposed acquisition of Alstom not going through because of the Commission

SIEMENS ALSTOM

- ✓ Despite heavy support from Emmanuel Macron - EU still rejected that deal
- ✓ That time despite having the argument that a merged entity would be required to combat CRRC - a Chinese company with more than 50% market share, the merger was rejected

2. Concerns about national security
acquisition of vestas by a foreign entity could potentially raise concerns about the transfer of sensitive technology or intellectual property
It may require approval of regulatory bodies such as Denmark's Ministry of Foreign Affairs

3. Employment and labour laws
The acquisition could potentially result in layoffs or job losses. As a result, regulatory bodies may require Siemens to provide assurances about job security and other employment-related issues as a condition of the acquisition.

SOURCES: Team Analysis, S&P Global Market Intelligence (2023), bloomberg

Foreign Exchange Risk Overview

SIEMENS

Increased Forex risk can be countered by borrowing in the local market, using Currency Baskets and Deal-Contingent Forwards

Siemens AG

- Siemens AG's principal currency is **Euro**, but the subsidiaries' business transacts in different currencies **(Euro, US Dollar, Chinese Yuan**), which exposes the company to foreign exchange risk
- In order to **hedge forex rates**, the company uses derivative contracts (primarily foreign currency exchange contracts, foreign currency swaps, and options) to achieve a **1:1 hedge ratio**. The majority risk results from the contracts denominated in US$ and the risk is hedged against the euro at an average rate of **1.2293 €/US$**
- To leverage the foreign exchange risk the company uses a **hedge accounting method:**

Effect of changes in exchange rates on cash and cash equivalents	679	204
Change in cash and cash equivalents	927	(4509)
Cash and cash equivalents at beginning of period	9545	14054
Cash and cash equivalents at end of period	10472	9545

Vestas

- Vestas' principal currency is the **Danish krone**, but the subsidiaries' business transacts in different currencies **(Euro & US Dollar**), which exposes the company to foreign exchange risk
- In order to hedge forex rates, the company to achieve a **0.8:1 hedge ratio**. The company's financial statements are reported in EUR and the EUR forex risk is very less due to Denmark's fixed exchange rate policy towards EUR**.**

Foreign Currency Risk	Effect on Profit (mEUR)
USD	-49
AUD	6
BRL	15
GBP	-13
TWD	-12
CNY	-16

Sensitivity w.r.t. to 10% increase in currencies against EUR

Acquisition strategy to hedge currency exchange rate risk

Issuing Bond in Danish Krone

Assuming that Vestas' shareholders will be paid in DKK, Siemens can issue a bond in the **NASDAQ Copenhagen stock exchange** to reduce forex risk

Deal-Contingent Forwards:

Deal Contingent Forward contracts for the EUR will be purchased at the end of the acquisition

A Sample unweighted currency basket...

	EUR	USD	AUD	GBP	JPY
EUR		0.76%	0.86%	0.64%	0.92%
USD	0.76%		1.15%	0.94%	1.03%
AUD	0.86%	1.15%		0.84	0.99%
GBP	0.64%	0.94%	0.84%		0.95%
JPY	0.92%	1.03%	0.99%	0.95%	

Currency Baskets

For increased exposure to volatility, A weighted basket of currencies with low volatility can be held to minimize downside risk and provide more stability and accurate predictability of revenues and profits

SOURCES: Annual Report, Team Analysis, Bloomberg

SIEMENS

ALTERNATIVE SOLUTION

VI

From a pool of 50+ companies, we narrowed down to Solar Edge as the perfect acquisition target. Solar Edge is a renewable inverter company that has shown tremendous growth. It has clients in 90 countries but is dependent on USA and Europe. The singular focus the company has on innovation has helped it develop a significant competitive advantage technologically

STRATEGIC ACQUISITION FUNNEL

SIEMENS

From a pool of 50+ companies, we narrowed down to Solar Edge as the perfect acquisition target.

COMPANY POOL

Examples for representation

solaredge, CRRC, ptc, SUNGROW, ENPHASE, Honeywell, ATLASSIAN, SMA SOLAR TECHNOLOGY

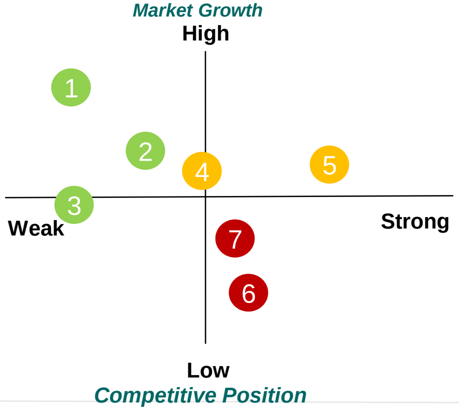
FILTERS

1 STRATEGIC FIT

Filters:

- Should impact multiple target areas.
- Should make the company more sustainable
- Siemens should have signaled intention to acquire in the domain.
- Less prone to volatility due to geopolitical situation

OVERVIEW OF ANALYSIS



Key Focus Areas

1) Renewable Inverters
2) Batteries & EMS
3) Mobility
4) Improve in Solar and grid
5) Electrification and SI
6) APAC expansion in Wind Energy, DI, SI
7) Reduce Dependence on Automotive in DI

HIGHLIGHTS

EMS and Inverter companies not only help by impacting the **first focus area** but indirectly they also impact **the subsequent 3**

Cybersecurity Companies impact multiple sectors but direct renewable impact is minimal

Siemens has acquired to shown intention to acquire companies in these domains

---

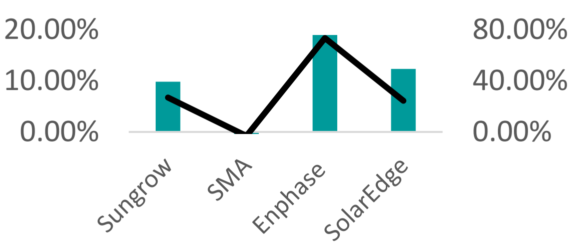
solaredge, SMA SOLAR TECHNOLOGY, SUNGROW, ENPHASE

2 OPERATIONAL EXCELLENCE

Filters:

1) The company should have shown operational improvement
2) Their Margins and revenues should be exemplary

Margins(Right axis) & Revenue Growth



✓ Out of the best-performing and most suitable companies, Sungrow, Enphase Energy and Solar Edge are the potential targets with fundamental growth

Acquiring Sungrow which is a Chinese company, can have a **negative impact due to geopolitical tensions** and thus wont be suitable enough for Siemens which is a German Company

Siemens' businesses stand to gain substantial synergies from these companies

---

ENPHASE, solaredge

3 DEAL FEASIBILITY AND POTENTIAL VALUE CREATION

	Market Cap	Synergy Potential
ENPHASE	EUR 27 bn	■■■□□
solaredge	EUR 16 bn	■■■■■

✓ After considering **35% premium** over the market cap, the minimum debt required for acquiring Enphase and SolarEdge would be **EUR 26 bn and EUR 12 bn** respectively

Siemens may find **SolarEdge** to be the most viable acquisition option, given the **significant synergies** that can be generated through the deal and the **feasibility of sourcing** it.

SOURCES: Team Analysis, Capital IQ

OVERVIEW: Solar Edge

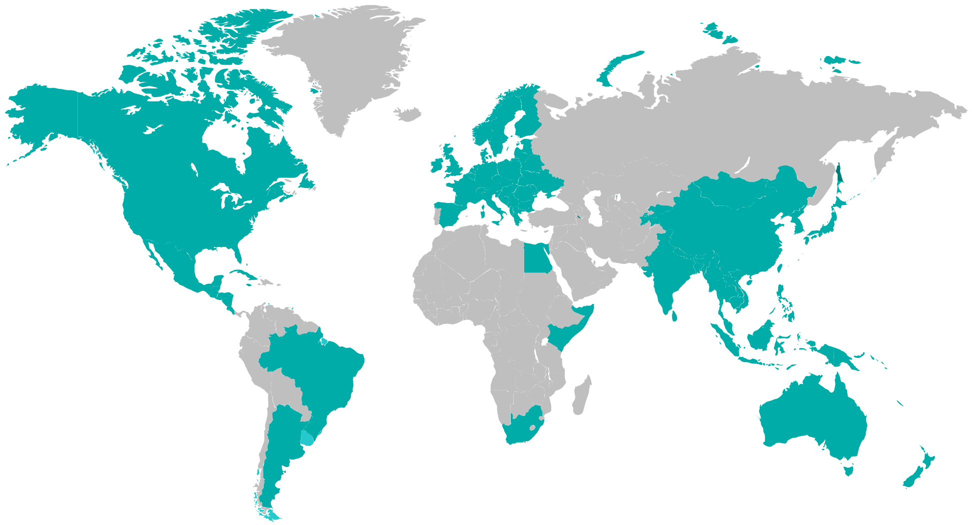
SIEMENS

Solar Edge is a renewable inverter company that has shown tremendous growth with clients in 90 countries…

Overview of Solar Edge: *development and current scenario*

- A global provider of smart energy technology
- An Israeli company, established in 2006, that develops and sells **solar inverters** for photovoltaic arrays, energy generation monitoring software, as well as other related products and services to **residential, commercial and industrial customers.**
- In fiscal year 2022, generated a revenue of $3.1 billion, rose 58% year over year

*Solar edge has **wide geographic footprint** but relies highly on **Europe and USA***



Segment make up: *Solar Edge mainly relies on its inverters and power optimizers*

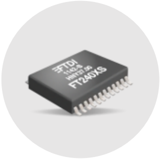

Inverters

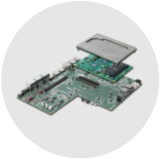

Power Optimizer

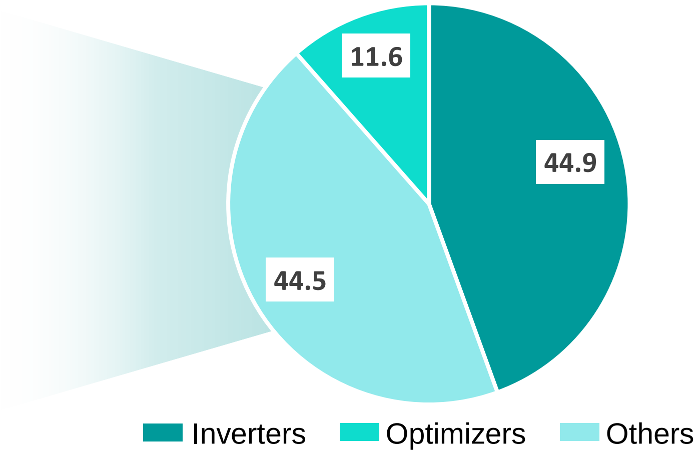

Storage & Backup


Smart Modules

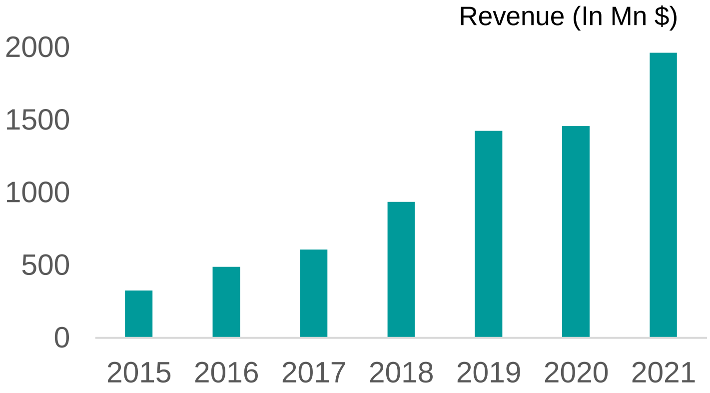

EV Charger


Software

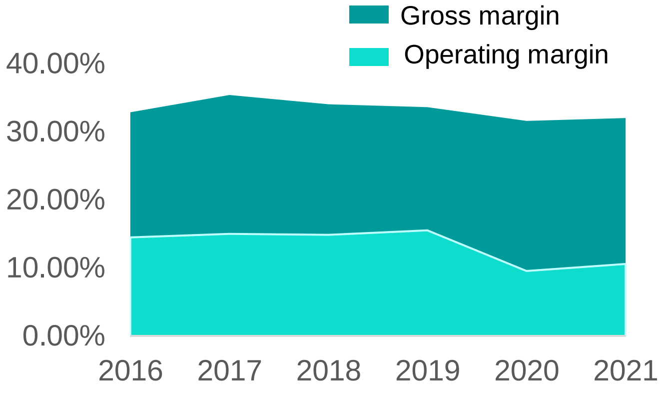

Accessories



Solar Edge has grown with tremendous pace over the past 6 years…



…and has been able to strongly sustain its impressive margins



SOURCES: Annual Report, Company Website

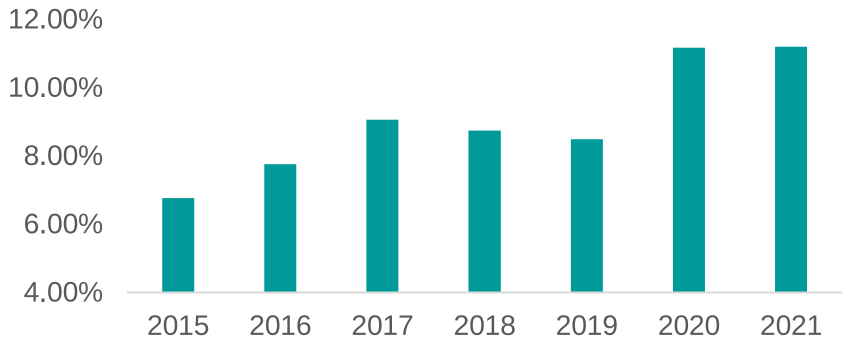
Innovation and technological edge

SIEMENS

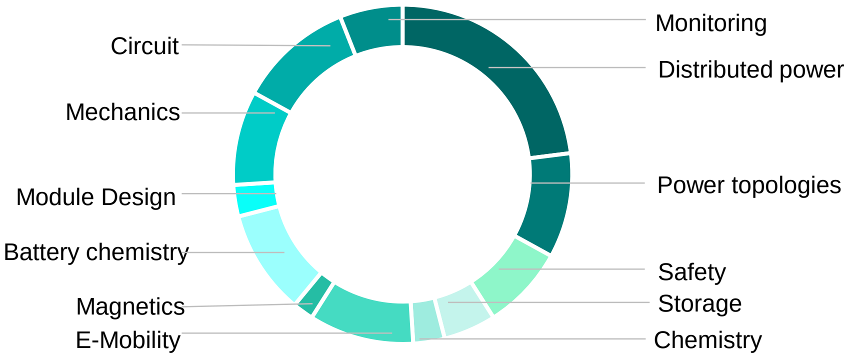
The singular focus the company has on innovation has helped it develop a significant competitive advantage…

*The company focuses immensely on **R&D & innovation***

R&D as percentage of Revenue



SolarEdge maintains 405 granted product patents with an additional 397 patents pending



*And its acquisition history shows its quest to become a **market leader in solar and adjacent markets***

GAMATRONIC™

2018
Amount: $11.5 m

"Develops uninterruptible power supply (UPS) products"

Kokam

2018
Amount: $88 m (75% stake)

"provider of Lithium-ion battery cells and storage solutions"

S.M.R.E. Engineering

2019
Amount: Undisclosed

"end-to-end e-mobility solutions for electric vehicles"

Hark.

2023
Amount: Undisclosed

"Energy Analytics and Industrial IoT company"

*This singular focus on **R&D and innovation** has helped them **gain significant edge***

Continuous innovation has led them to manufacture products that provide:

Higher Efficiency

Instance:
Development of DC optimized inverters, more efficient than traditional string inverters.

Better Performance

Instance:
Development of power optimizers, which improve solar system performance.

Increased Flexibility

Instance:
Integrating company's energy storage solution with its inverters and power optimizers, to store excess energy

Enhanced Safety

Instance:
Developing inverters with a built-in safety feature that shuts down the system in case of an emergency

SOURCES: Annual Report, Tracxn, Company Website

The Business Model And Concerns With It

SIEMENS

An efficient manufacturing model has helped the company outperform, but client concentration is a hindrance…

*Its focus on **R&D and a unique business model…***

Solar edge contracts with two global electronics manufacturers, Jabil and Flex, to manufacture their solar products.

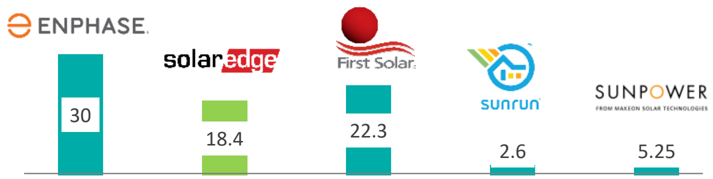
flex JABIL

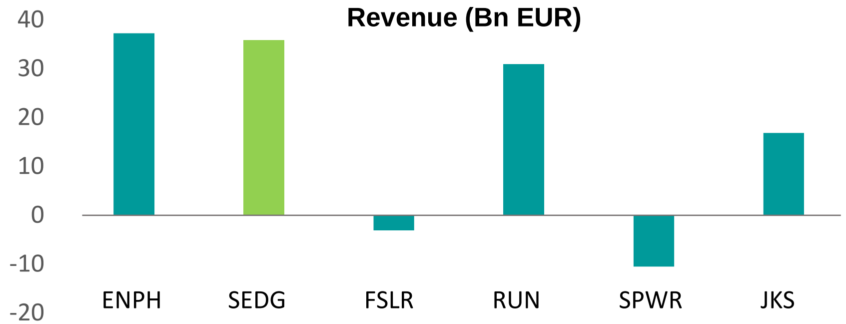
The benefits that accrue are:

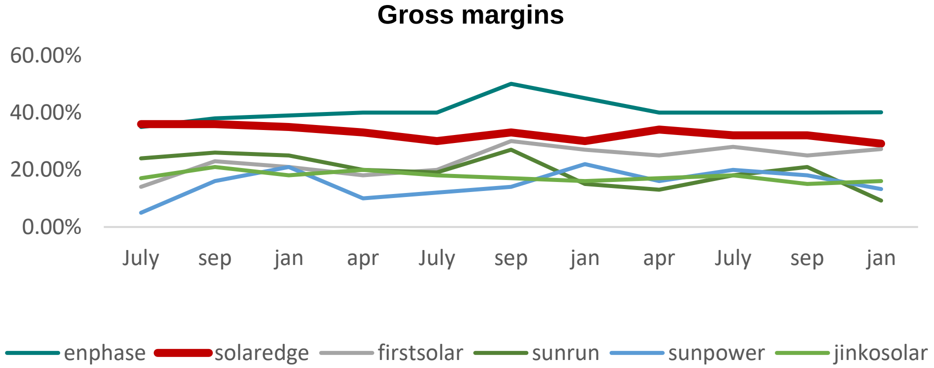
- Access to advanced equipment, processes, skills and manufacturing capacity
- “Capital light" budget.
- Flexibility in manufacturing certain products in Asia, Europe, and North America
- Potentially increasing responsiveness to customers
- Reducing costs and delivery times

*…has helped the company **outperform the competition***

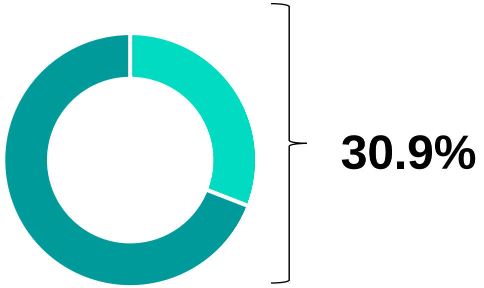
Market capitalization (Bn USD)







*However their **customer concentration is a big concern** for them…*



30.9% of their revenue is dependent on 2 big customers:

CED sunrun

This may lead to the following potential problems:

- Revenue Volatility
- Reduced Bargaining power
- Increased risk

SOURCES: Annual Report, Team Analysis, Company Website, Solar Mango

Synergy Analysis: SolarEdge and Siemens

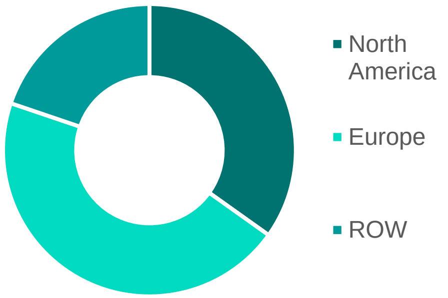
SIEMENS

The acquisition will lead to a lot of arising synergies in Manufacturing and Distribution, Market expansion and R&D

	Imperative	Synergies	Ease of quantification	Ease of realisation

Manufacturing and distribution

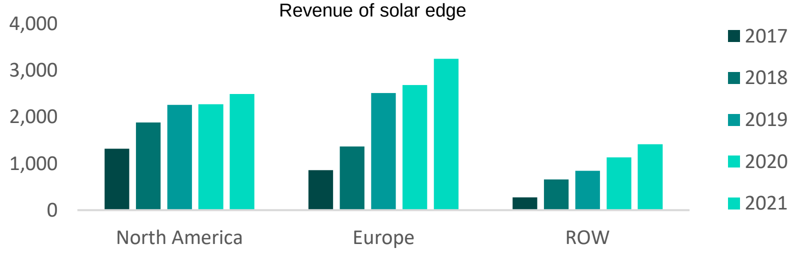
Majority of Solar Edge's sales lie in North America and Europe….



…and with Siemens having a lot of manufacturing capabilities for renewables in those areas

- Reduced reliance on contract manufacturers
- Reduced manufacturing costs
- Reduced transportation costs
- Reduced overhead and admin expenses

Market expansion

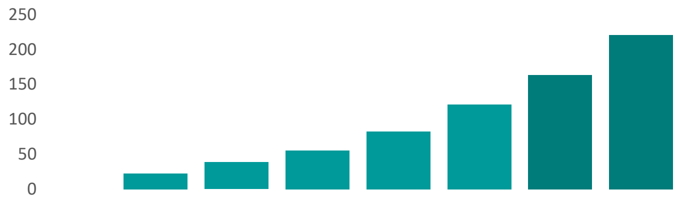


SolarEdge has been trying to diversify its user base, and we see a good growth prospects in countries apart from Europe and North America too.

- Leveraging existing relationships of for cross selling opportunities
- Reduced dependence on the major 2 clients for Solar Edge

R&D and technological benefits

R&D expenditure for solar edge has been on the rise…



Patents owned by Siemens

962	43,400
Solar edge	Siemens

- Leveraging R&D capacities and technical know how for developing new products
- Using patented technology for alternative use cases for complementary products*

*detailed next slide

SOURCES: Annual Reports, Team Analysis

Analysis of technological synergies arisen

SIEMENS

Apart from future shared R&D benefits, Siemens can integrate tech SolarEdge is strong in, in its current offerings

Feature/Technology	Rationale	Sectors Impacted	Integration Score	Impact

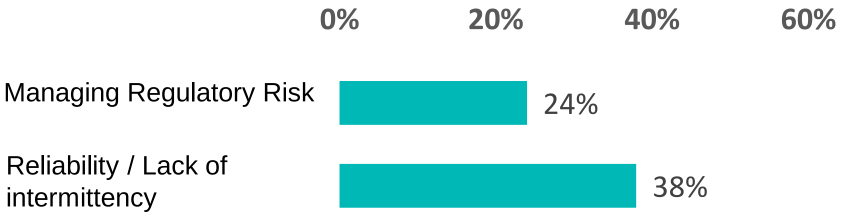
ADVANCED SAFETY FEATURES

Integrate across products of Siemens

SolarEdge's inverters and power optimizers are designed with advanced safety features, **such as arc fault detection and rapid shutdown.**

SolarEdge's inverters come with a 12-year warranty, which can be extended to 20 or 25 years for an additional cost.

The 2nd and the 3rd most cited risks of electrification are addressed



MOBILITY RAIL INFRA

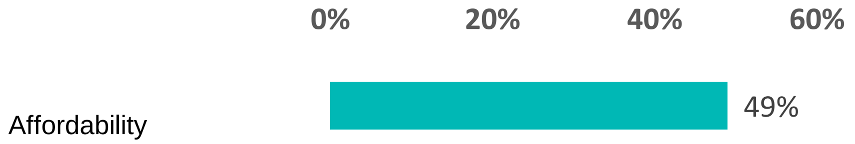
SMART INFRA

HIGHER MARGINS

Use with Siemen's Installations

Solar Edge's DC optimized inverter system allows significantly longer strings to be connected to the same inverter **This minimizes the cost of cabling, fuse boxes and other ancillary electric components**.

The most cited concern of electrification is addressed….



And the technology enables….

- ✓ easier installations with shorter design times
- ✓ a lower initial cost per watt
- ✓ larger installations per rooftop

MOBILITY RAIL INFRA

SMART INFRA

PV POWERED EV

Bundle with Siemen's Products

An inverter with integrated EV charge, **no additional dedicated circuit breaker is needed,** saving space and according potential upgrade to the main distribution pane

Barriers to infrastructure adoption...

- ✓ Cost
- ✓ Grid Load
- ✓ Resources

According to Mckinsey, one of the biggest hurdles to EV infra adoption is the load on gird, which this inverter charger minimizes

MOBILITY

SOURCES: Team Analysis, Annual Report, Bain ENR transition survey

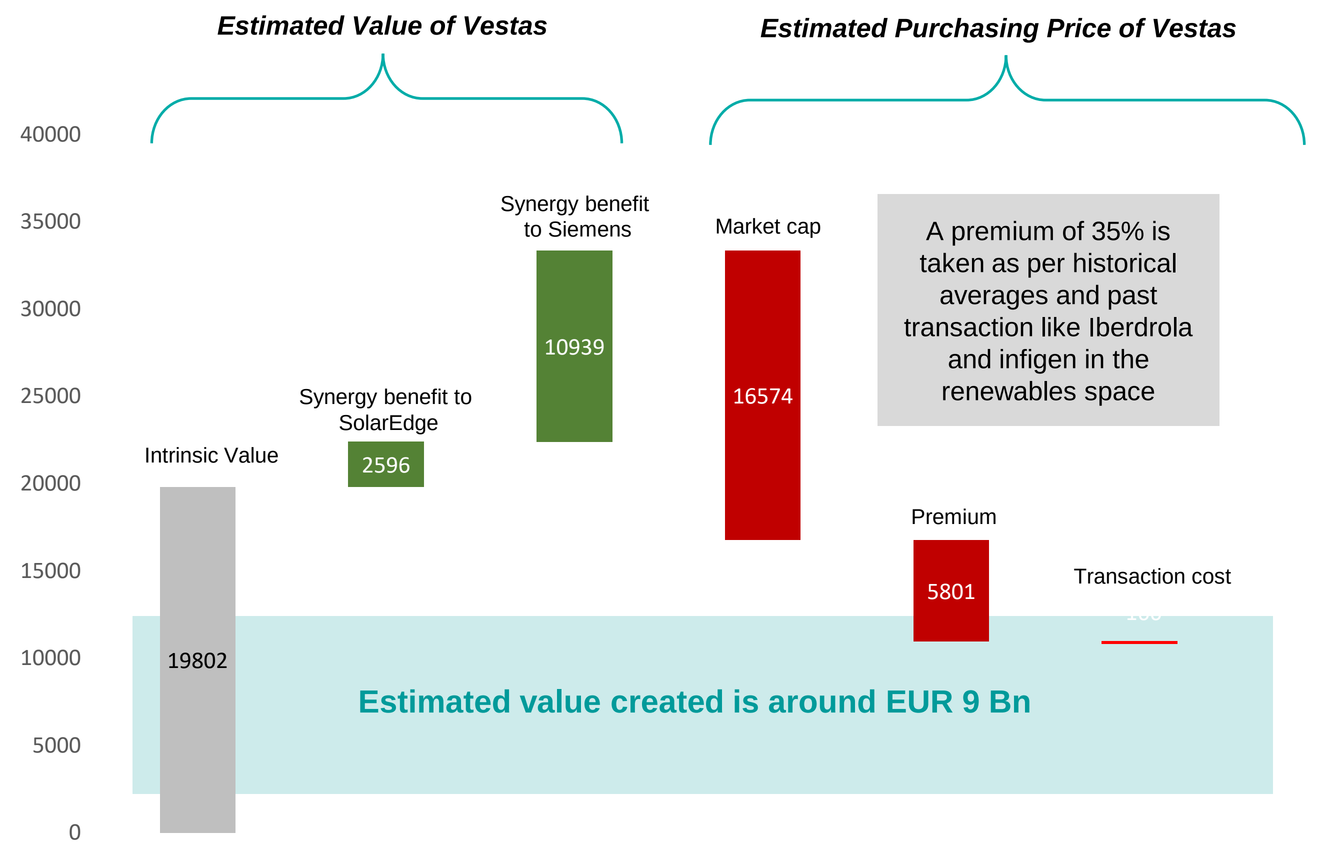
Purchasing Price VS Value of SolarEdge

SIEMENS

Siemens AG would lose around EUR 8.54bn on the acquisition after accounting for the synergies achieved and the premium paid over and above Vestas' current market capitalization that is required to convince the shareholders

The price to be paid is ***considerably less than the value that will be created……***

In billion EUR



Post acquisition

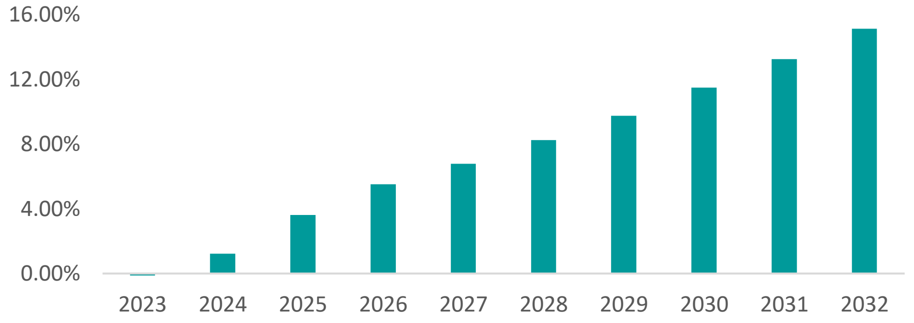
- Synergies are primarily driven by business overlaps in SolarEdge's invertor business and Siemen's mobility and smart infra business segments.
- Post acquisition the combined company is likely to benefit from increased order growth as well as supplements to Siemens's existing business driven by SolarEdge's technological knowhow and expertise

Estimated total synergy value is 13.535 Billion Euros

- With the primary drivers being gross margin accretion and fall in SG&A margins.
- Supplementary technology support form SolarEdge's battery business will help plug in deficiencies in Siemens's existing business leading to margin accretion and top line revenue growth.

EPS Accretion

We assume that it will take 3 years for the revenue and cost synergies to kick in



Deal structure = 45% cash and 55% debt

SOURCES: Team Analysis, S&P Capital IQ Pro

Situation

Siemens, an MNC with diversified operations is **pondering whether to acquire Vestas**. Their objective is to foray into **renewable energy.** Vestas is a company that specializes in wind turbines. Given that Siemens AG only has a **40 percent stake in wind/ renewables**. Are their enough Synergies to warrant a deal. Does this deal create value or are there alternatives which offer a stronger impact in terms of value creation and ESG?

Finding Strategic Priority

Siemens **trails in margins** and **revenue in smart infra**, a segment where acquisitions drive growth. Key focus area of investments are **EMS, inverters & Automation** .

Siemens rail infrastructure business is underperforming. Sustainability and electrification are a key theme.

In the Power generation segment**, Solar is expected to grow the most.** The precarious position of China in them dominating the renewables supply chain have left Solar Inverters and EMS software as lucrative options.

Acquisition Feasibility & Impact

	Vestas Score	Vestas	solaredge Score	solaredge
Strategic Fit	●○○○ (1 of 4)	- Doubles down on a sector it has tried reducing stake in - Does not address the priority areas - Does improve margins	●●●● (4 of 4)	- Addresses priority areas such as smart infra & mobility, Integrating advanced technologies relating to EV, Electrification etc - Acquires a leading solar inverter company with significant renewable and ESG impact Reduces R&D and expands market
Deal Feasibility	●○○○ (1 of 4)	- Post Merger HHI of 3600 in European Market and 7661 in US Market - Precedent of the Alstom Siemens merger which was rejected by EU	●●●● (4 of 4)	- Minimal Overlap in Operations
Impact	○○○○ (0 of 4)	- The merger will lead to a average EPS dilution of 4% in the next 10 years, Vestas is already considered overvalued by 8%. The synergies from the acquisition 5.5 Billion Euros (Base Case) are unlikely to cover the entire outlay.	●●○○ (2 of 4)	- Acquisition will lead to average EPS accretion of 7.4% over 10 years - Synergies of approx. 13.5 Billion Euros (Base case) - Buying a company undervalued by 19.5% in the markets

SOURCES:

BIBLIOGRAPHY

VII

Bibliography

SIEMENS

McKinsey & Company. (2018). Capturing value at scale in discrete manufacturing with Industry 4.0. Retrieved from https://www.mckinsey.com/~/media/mckinsey/industries/advanced%20electronics/our%20insights/capturing%20value%20at%20scale%20in%20discrete%20manufacturing%20with%20industry%204%200/industry-4-0-capturing-value-at-scale-in-discrete-manufacturing-vf.pdf

Mordor Intelligence. (2021). Rolling Stock Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.mordorintelligence.com/industry-reports/rolling-stock-market

Mordor Intelligence. (2021). Smart Building Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.mordorintelligence.com/industry-reports/smart-building-market

Mordor Intelligence. (2021). Industrial Automation Software Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.mordorintelligence.com/industry-reports/industrial-automation-software-market

Mordor Intelligence. (2021). Process Automation Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.mordorintelligence.com/industry-reports/process-automation-market

Technavio. (2021). Global Industrial Automation Software Market - Industry Analysis. Retrieved from https://www.technavio.com/report/industrial-automation-software-market-industry-analysis

L.E.K. Consulting. (2018). Discrete Automation: Favourable Global Trends Driving Growth and Investment. Retrieved from https://www.lek.com/insights/pt/discrete-automation-favourable-global-trends-driving-growth-and-investment

International Energy Agency. (2019). The Future of Rail. Retrieved from https://www.iea.org/reports/the-future-of-rail

Bain & Company. (2022). How Energy and Natural Resources Companies Respond to Ukraine Crisis [ENR Report]. Retrieved from https://www.bain.com/insights/how-energy-and-natural-resources-companies-respond-to-Ukraine-crisis-enr-report-2022/

International Renewable Energy Agency (IRENA). (2019). Future of Wind: Deployment, Investment, Technology, Grid Integration and Socio-Economic Aspects. Retrieved from https://www.irena.org/publications/2019/Oct/Future-of-wind

Bibliography

SIEMENS

International Energy Agency. (2023). Energy Technology Perspectives 2023: Executive Summary. Retrieved from https://www.iea.org/reports/energy-technology-perspectives-2023/executive-summary

IEA Photovoltaic Power Systems Programme (IEA PVPS). (2022). Snapshot of Global Photovoltaic Markets: Trend Report 2022. Retrieved from https://iea-pvps.org/wp-content/uploads/2023/02/PVPS_Trend_Report_2022.pdf

United Nations Environment Programme (UNEP). (2022). Emissions Gap Report 2022. Retrieved from https://www.unep.org/resources/emissions-gap-report-2022?gclid=Cj0KCQiAjbagBhD3ARIsANRrqEvtilbNucWWSxi-IFxPKuZbSRc7eJrU95EzljjMuTU2_cR8LtB3jVcaAgWaEALw_wcB

Recharge News. (2022). 'We're all in trouble': wind turbine makers selling at a loss and in a 'self-destructive loop', bosses admit. Retrieved from https://www.rechargenews.com/wind/were-all-in-trouble-wind-turbine-makers-selling-at-a-loss-and-in-a-self-destructive-loop-bosses-admit/2-1-1197217

Mordor Intelligence. (2021). Europe Large Wind Turbine Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026). Retrieved from https://www.mordorintelligence.com/industry-reports/europe-large-wind-turbine-market

S&P Global Market Intelligence. (2022). Wind turbine makers put profits over volume as orders decline. Retrieved from https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/wind-turbine-makers-put-profits-over-volume-as-orders-decline-69510900

Bloomberg. (2022). Wind Giant Vestas Cuts Dividend as Supply-Chain Snarls Persist. Retrieved from https://www.bloomberg.com/news/articles/2022-02-10/wind-giant-vestas-cuts-dividend-as-supply-chain-snarls-persist

Wood Mackenzie. (2022). Wind industry faces a perfect storm of profit pressures. Retrieved from https://www.woodmac.com/news/opinion/wind-industry-faces-a-perfect-storm-of-profit-pressures/

International Energy Agency (IEA). (2022). World Energy Outlook 2022. Retrieved from https://www.iea.org/reports/world-energy-outlook-2022

Grand View Research. (2022). North America Point of Care (POC) Diagnostics Market Size, Share & Trends Analysis Report By Product (Cardiac Markers, Infectious Diseases), By End Use (Clinics, Hospitals), By Mode (OTC, Prescription), And Segment Forecasts, 2022 - 2028. Retrieved from https://www.grandviewresearch.com/industry-analysis/north-america-point-of-care-poc-diagnostics-market