



GREEN ENERGY EXPORT DAY 2023



GREEN ENERGY EXPORT DAY 2023 – PROGRAMME

SALEN

13+15

19

17

HOUSE OF GREEN



08.30 MARKET PLACE OPENS

08.30 WORKSHOP #0

WIND ENERGY
EGP KOREA/JAPAN

10.00 OPENING: DANISH ENERGY EXPORTS - OUR PROMISE TO THE GLOBAL CLIMATE AND DANISH ECONOMY

10.45 MARKET PLACE – COFFEE

11.15 WORKSHOP #1

WIND ENERGY
GLOBAL MARKET OUTLOOK

DISTRICT HEATING
NETHERLANDS

ENERGY EFFICIENCY
USA (+ASIA BRIEF)

GREEN HYDROGEN
DANISH EXPORT CASE

DENMARK-INDIA
GREEN PARTNERSHIP

12.15 MARKET PLACE - LUNCH

13.00 WORKSHOP #2

WIND ENERGY
SCALING UP FOR EXPORTS

DISTRICT HEATING
GERMANY

ENERGY EFFICIENCY
EUROPE

GREEN HYDROGEN
USA

BIOENERGY
EUROPE (DE+PL)

14.00 MARKET PLACE – COFFEE

14.30 WORKSHOP #3

WIND ENERGY
MARKET MATURITY

REBUILD UKRAINE
BUSINESS / FINANCE

ENERGY EFFICIENCY
GERMANY

GREEN HYDROGEN
EUROPE

BIOENERGY
USA

15.30 AMBASSADOR'S ROUNDTABLE: SEIZE THE OPPORTUNITY

16.00 RECEPTION AT TOP TERRACE

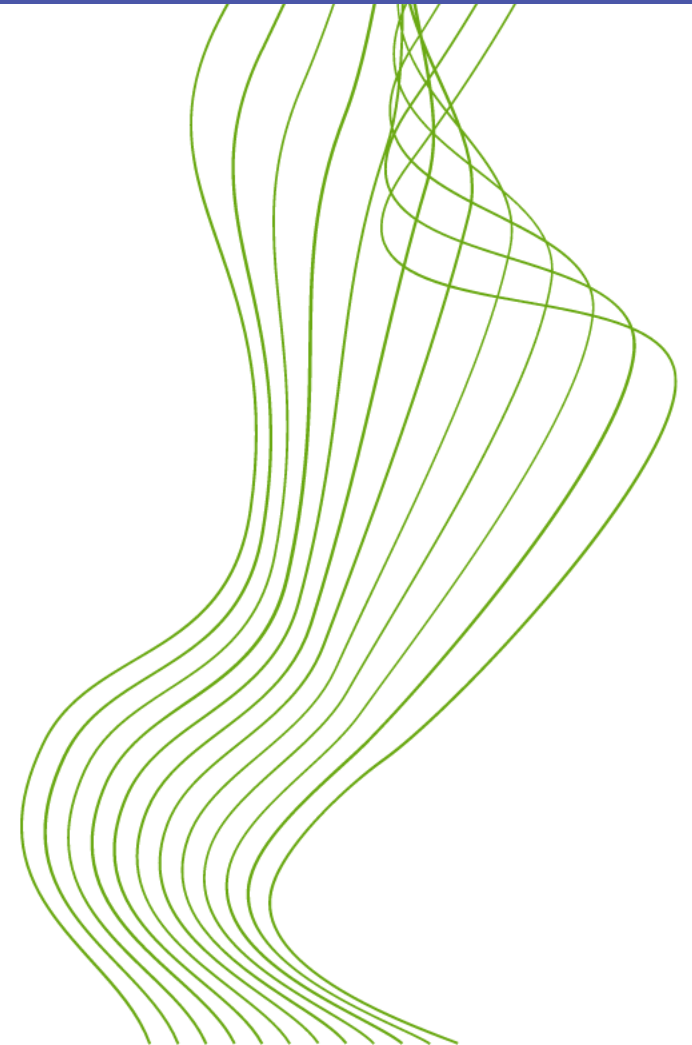




GREEN ENERGY
EXPORT DAY 2023

WORKSHOP:
ENERGY EFFICIENCY IN USA

WELCOME





GREEN ENERGY EXPORT DAY 2023

WORKSHOP: ENERGY EFFICIENCY IN USA

Programme

- **Mille Munksgaard**, Project Manager, DI USA
- **Mia Brøndum**, Chief Business Development Officer, WindowMaster
- **Jacob Outzen Dransfeldt**, Danish Consulate General, Silicon Valley
- **Michael Skovgaard**, Business Development Director, Americas/WT, Grundfos

Discussion: How do we most efficiently utilize the opportunities within EE in USA?

Asia Brief – Energy Efficiency in Southeast Asia

- **Troels Jakobsen**, Head of Commercial Section, Embassy of Denmark in Vietnam

Moderator: **Emilie Mørup**, Global Market Development Advisor, Confederation of Danish Industry





ENERGY EFFICIENCY: BUILDINGS AND INDUSTRY

USA

Mille Munksgaard
Director, Strategy and Projects

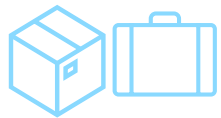


Grow Your Business Internationally





Soft landing with DI



Compliance

Understand complicated rules and regulations



Strategic Planning

Understand and prepare for market entry or expansion



Operations

A fast, flexible and compliant entry platform to build a backbone and reduce complexity

Full-service platform



U.S. Market - *at a glance*



World's largest
consumer market
and economy

330 mio. consumers

Denmark's largest
export market

Stabile and open
economy despite
economic crises and
political landscape

Happy Birthday, Inflation Reduction Act

- 1 Financial incentives** drives investments in energy-efficient technologies and upgrades.
- 2 Support for renovation** as the act includes provisions aimed at revitalizing infrastructure or renovating buildings
- 3 Promotion of green energy** as the act prioritize well-tested clean energy sources and energy mix towards more sustainable options
- 4 Research and development** initiatives regionally due to allocated funds to advance energy-efficiency technologies
- 5 Public awareness** encourages individuals and businesses to consider and implement energy-saving practices

9 regions

3 timezones

3000 counties

50 states



2022 State Scorecard

1. California

2. Massachusetts

3. New York

4. Vermont

5. Maine

6. District of Columbia

7. Rhode Island

7. Maryland

9. Connecticut

10. Minnesota

11. Oregon

11. Washington

13. Colorado

14. New Jersey

15. Michigan

16. Illinois

17. Hawaii

18. Delaware

19. New Hampshire

20. Virginia

21. Pennsylvania

21. Nevada

23. Utah

23. New Mexico

25. North Carolina

26. Wisconsin

26. Arizona

28. Tennessee

29. Missouri

29. Montana

29. Texas

29. Florida

33. Idaho

34. Indiana

35. Iowa

35. Nebraska

37. Arkansas

38. Kentucky

39. Georgia

39. Alaska

41. Oklahoma

41. Alabama

43. North Dakota

44. West Virginia

44. Ohio

46. Mississippi

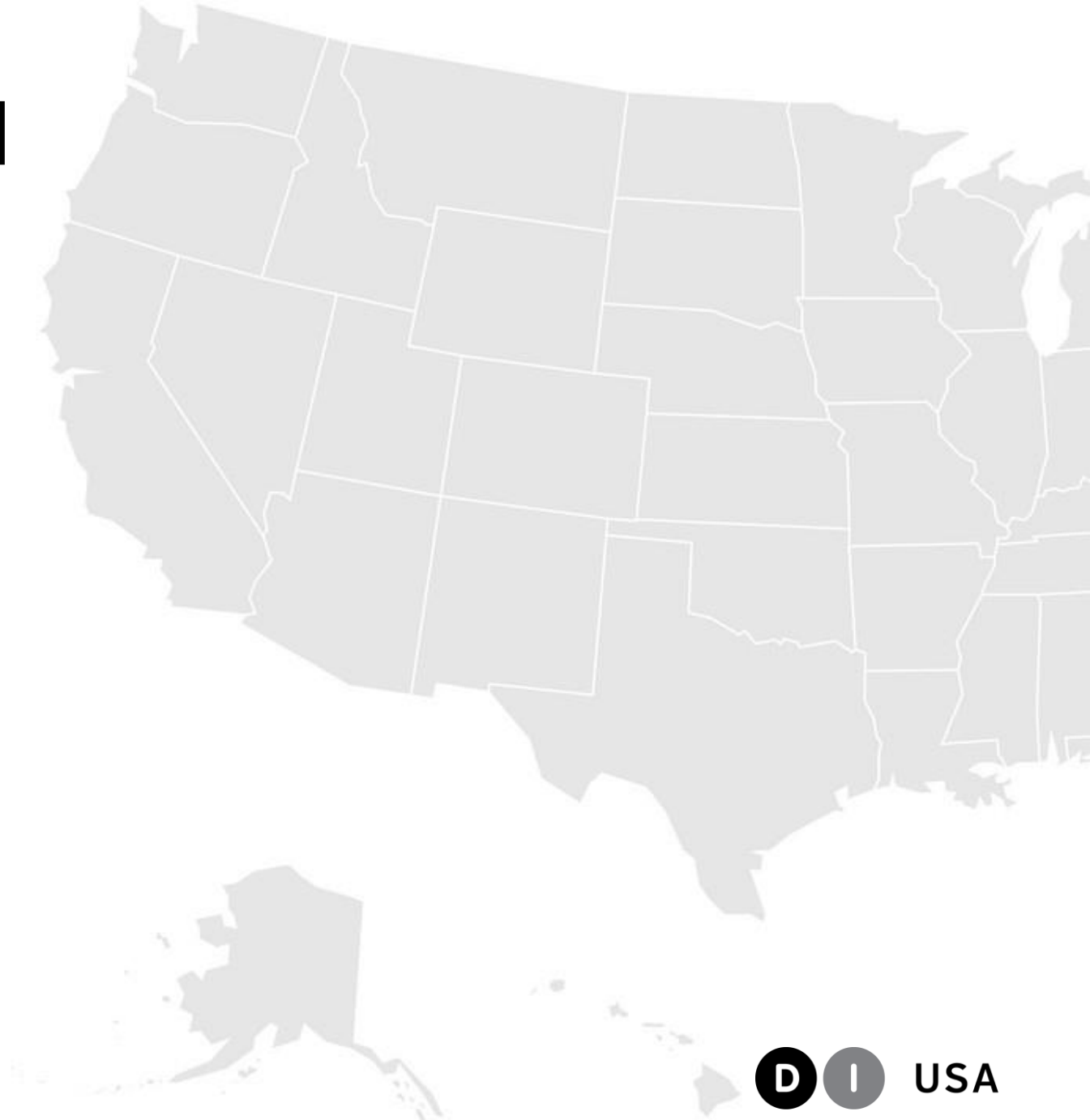
46. Louisiana

46. South Dakota

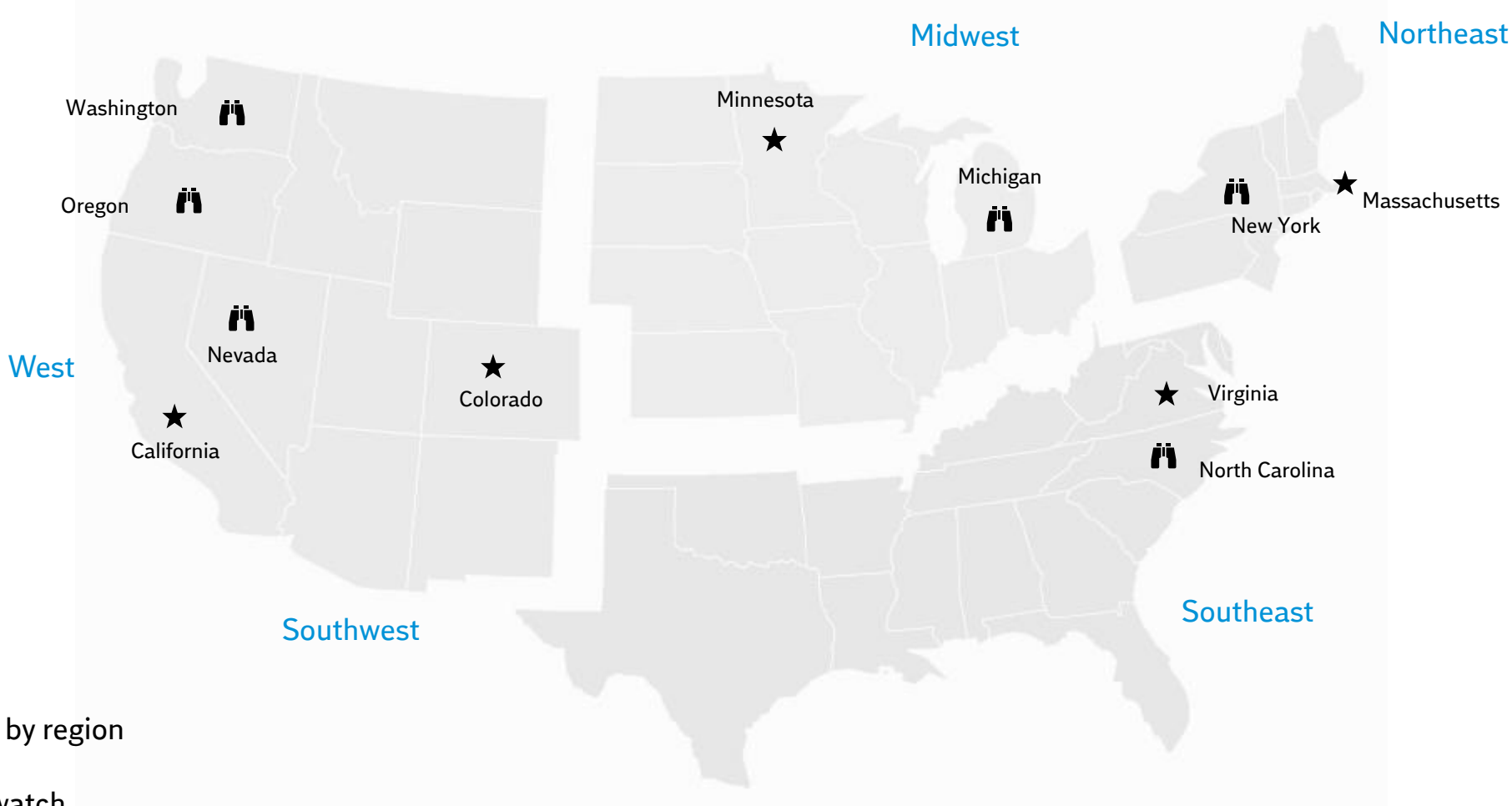
49. South Carolina

49. Kansas

51. Wyoming



Regional Highlights



★ Top states by region

🔭 States to watch

Source: ACEEE, 2023

Every Cloud has a Silver Lining

1. Policy Initiatives
2. Technological Innovations
3. Corporate Sustainability Efforts





THANK YOU

Mille Munksgaard

mimu@di.dk / +1 (929) 290 9701



WindowMaster



Agenda

- 1 About Me & WindowMaster.
- 2 Motivation and setup in the US.
- 3 Challenges and Opportunities – lessons learn (ing).

Agenda

Mia Brøndum, CBDO

1

About Me & WindowMaster.

2

Motivation and setup in the US.

3

Challenges and Opportunities.



- Started at WindowMaster in January 2017, hired in California as one of their first in direct sales representatives in the US.
- Went from Business Development Assistant to Sales Director for USA and Canada, and led a team of 5 in PA, USA.
- Oversaw the growth of no pipeline to a steady 200 Opportunities and projects throughout the US and Canada with prominent design teams needing complex energy efficiency and healthy ventilation solutions to their buildings.

Our Solutions



Our Business Areas



Natural Ventilation

Natural ventilation regulates a building's indoor climate by exploiting **the natural forces** created by temperature differences between the interior and exterior environment, thermal displacement within the building and winds around the building

Activated by temperature level and/or CO₂ level in room



Mixed Mode Ventilation

Mixed mode ventilation is a **combination of natural and mechanical ventilation**

Entails either periods with both NV and mechanical ventilation (MV), or a balancing of the two so MV takes over when required by external conditions

WindowMaster supplying NV solutions that can work with any MV product



Smoke and Heat ventilation

Smoke ventilation **removes smoke and heat** from a burning building and keeps escape routes and fire services access areas free of smoke

WindowMaster

Fresh Air. Fresh People.



Photo: Nicholas Hare Architects © Alan Williams Photography

We provide excellent and safe indoor climate primarily through natural ventilation for the benefit of people, environment and productivity.

WindowMaster targets the commercial market

Segments and building types for natural and hybrid ventilation

Education

Shopping center

Culture

Office

Hospital

Sports facilities



Our Presence in the World

- Established in 1990
- Sales offices in 7 countries
- Produced more than 1.500.000 actuators
- Customers in more than 20 countries
- Global network of certified partners
- Experience from more than 1000 projects



Our Sustainability Strategy 2030

Environmental



Corporate level
100% emission free

Cutting emissions

Decoupling growth



Building level
100% intelligent & healthy environment

Enable the true potential

Increase health and
enable savings



Product level
100% circular

Circularity promise

Products as a service



Social



Best employer

A safe and healthy working
environment



Governance



Responsible global
citizen

Supplier due diligence

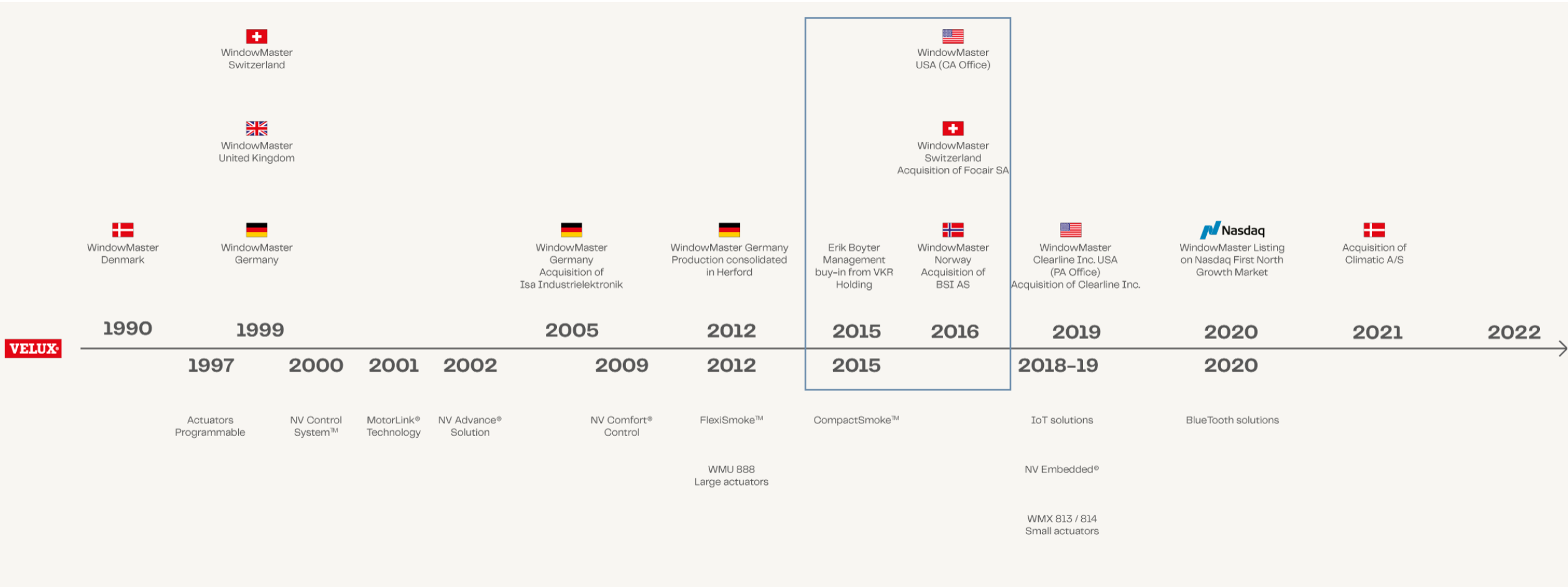
Code of Conduct signature of
100% of suppliers in 2025



Agenda

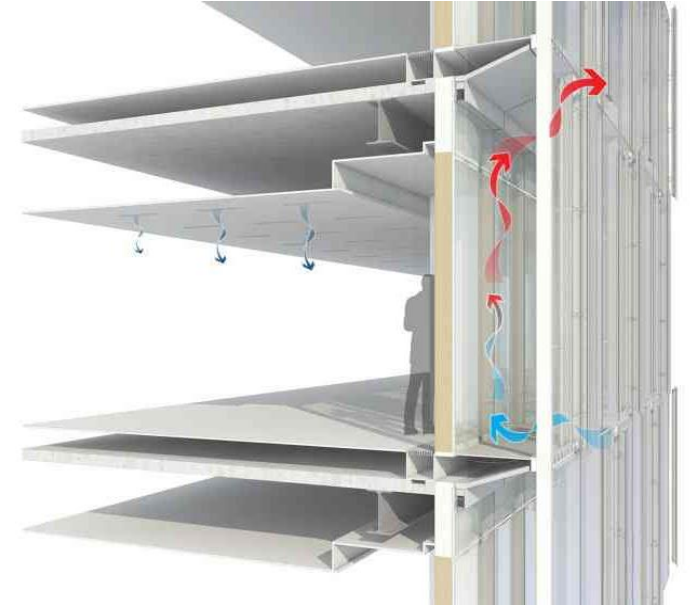
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- 2 Motivation and setup in the US.
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The History of WindowMaster



The Tower at PNC Plaza - Pittsburgh, PA

The world's greenest high-rise; Permasteelisa Double-Skin Façade



6300 WindowMaster actuators to control:

- 700 parallel windows in the outer double skin façade
- 1450 automated air vents in the inner facade.

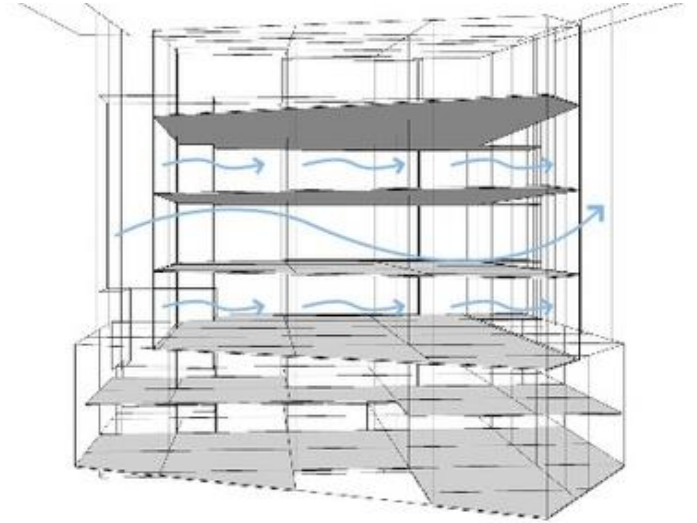
MotorLink® technology:

- synchronization of 4 actuators on 1 parallel window
- Feedback & control position via BMS.

45% of the time are able to open the windows for fresh air and turn off the mechanical ventilation

The Bullitt Center – Seattle, WA

The Greenest Commercial Building in the World – Schuco Curtain Wall



NATURAL VENTILATION
NIGHT FLUSH & OPERABLE WINDOWS

- More than 15 awards
- 52,000 sq. ft.
- Mixed use office spaces
- Exceeds LEED Platinum
- 2030 Challenge
- Living Building Challenge
- Net Zero Energy
- Built to last for 250 years

To help cut energy consumption to 23% the amount of a traditional building its size, natural light will account for 82% of all lighting, thanks to oversized windows and higher ceilings that help get light farther inside.

And so will air, as the building's electronic "brain" automatically opens and shuts the windows based on temperature needs, eliminating the need for air-conditioning units.

University of Baltimore School of Law

Natural ventilation can be utilized 40% of the time.



“The facade and atrium design led to passive and active strategies that typically aren't applied in this climate. The building's passive design strategies achieve very high performance and flexibility without the use of PV or solar thermal systems.”



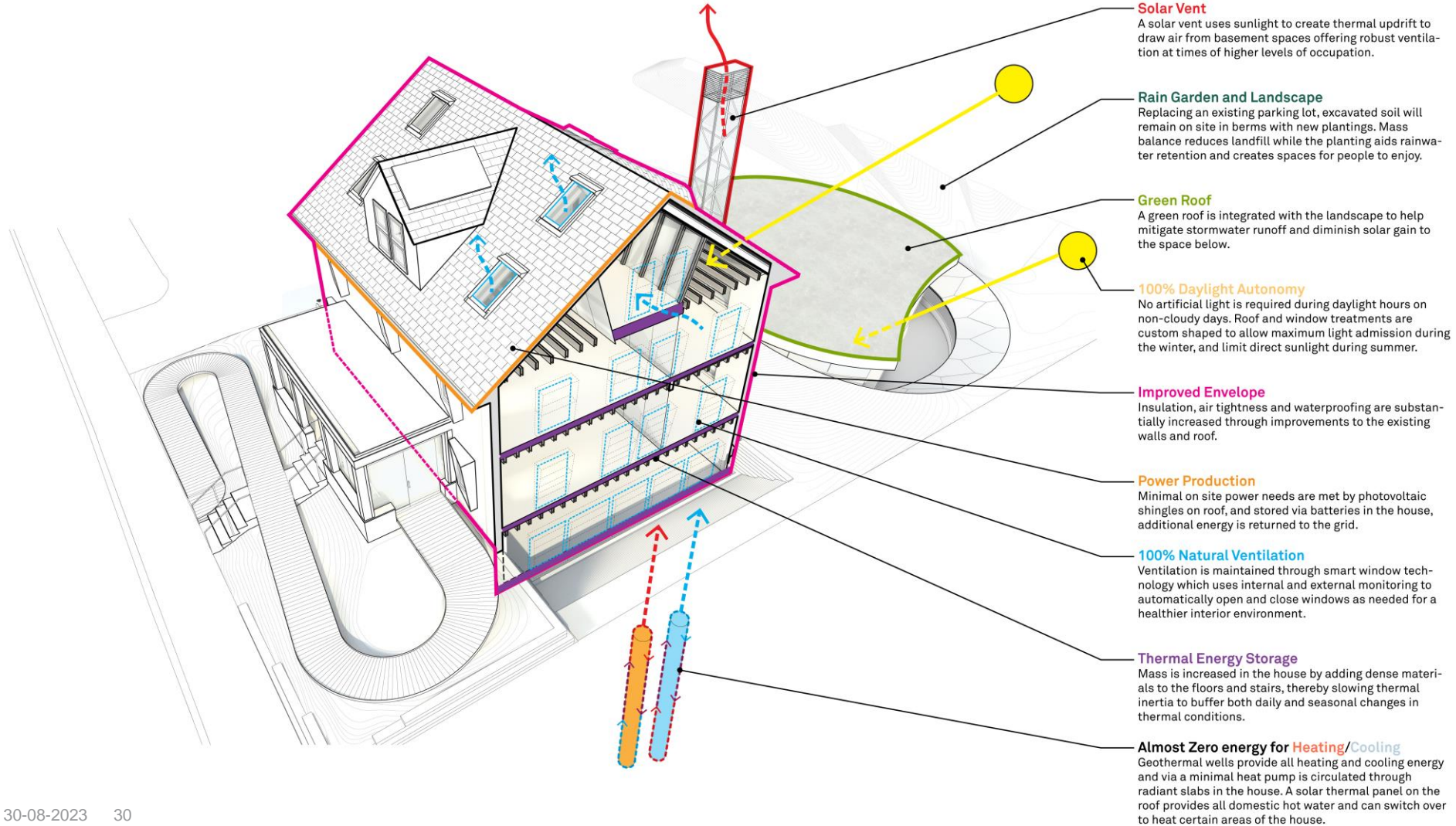
The windows will be automatically closed when the air condition is on and made available for the users to open and close at will by the manual override switches, when the air condition is off. This saves energy.



The law center does have a **mechanical AC system**, but it is **consuming 50% less than** would be required for a normal building of its size.

HouseZero, Harvard University

1st NV Advance® System in the US



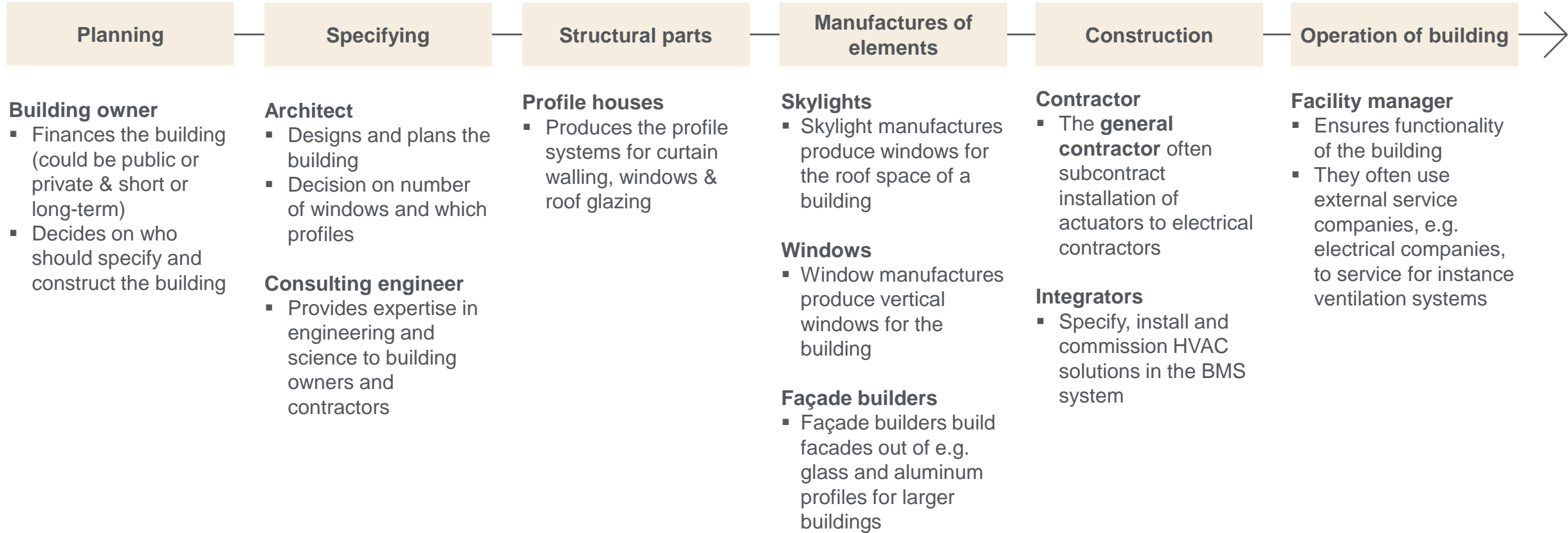
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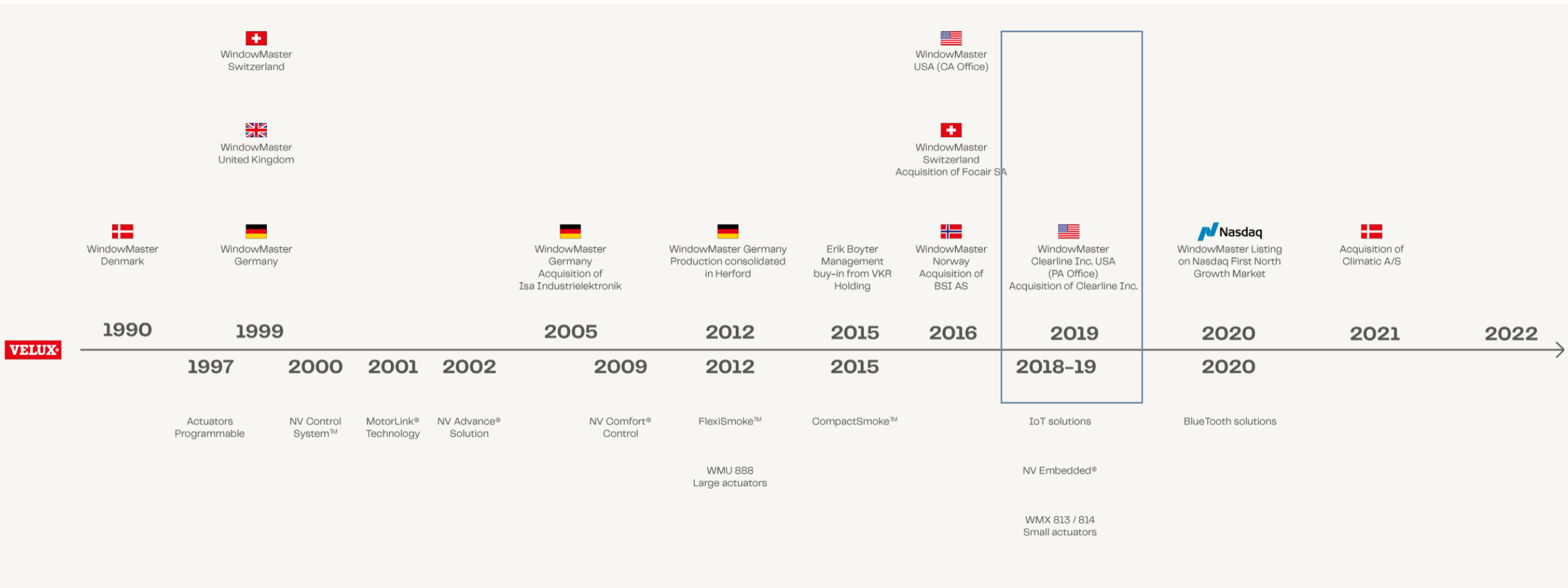
Complex Value Chain

The sales process requires interactions with many stakeholders

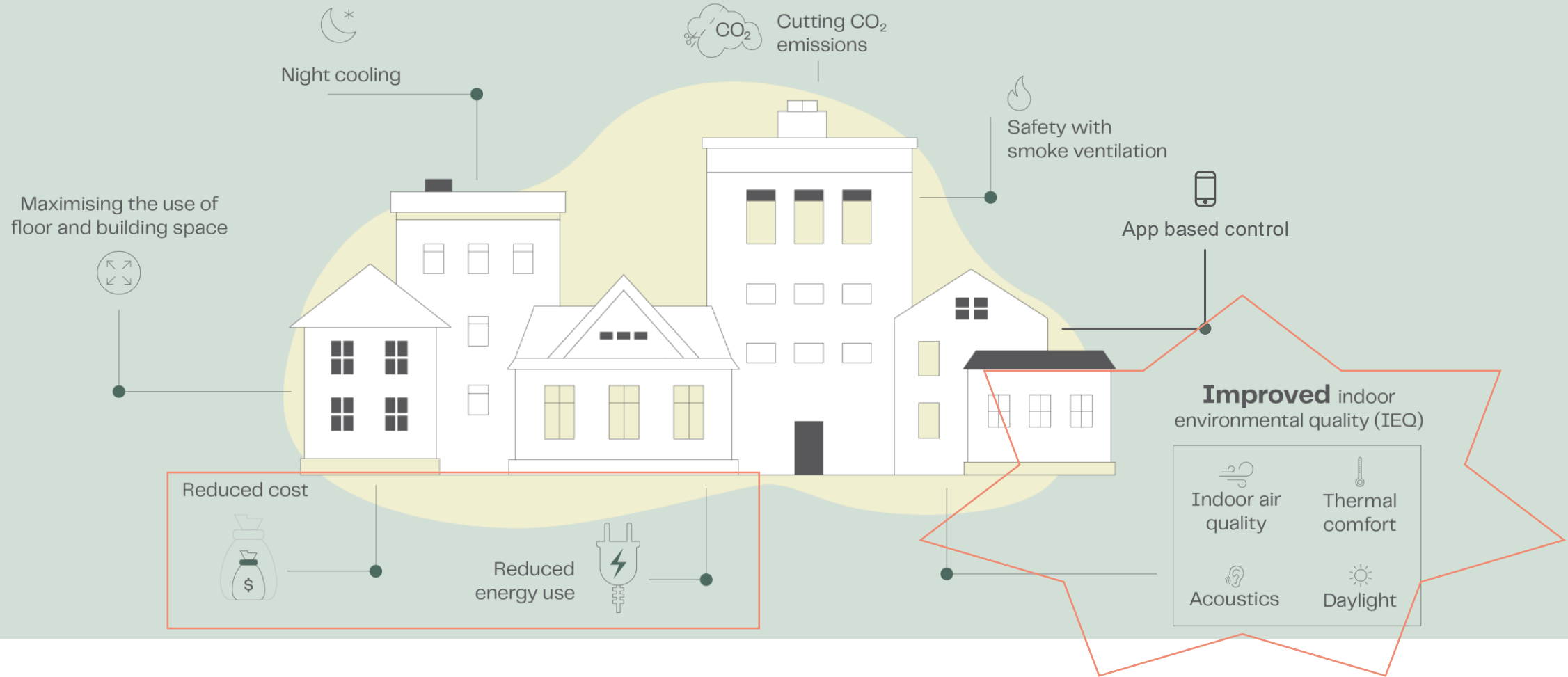
Trust!
Reference Cases!
Known Brand!



The History of WindowMaster



Benefit of Natural, Mixed Mode and Smoke Ventilation

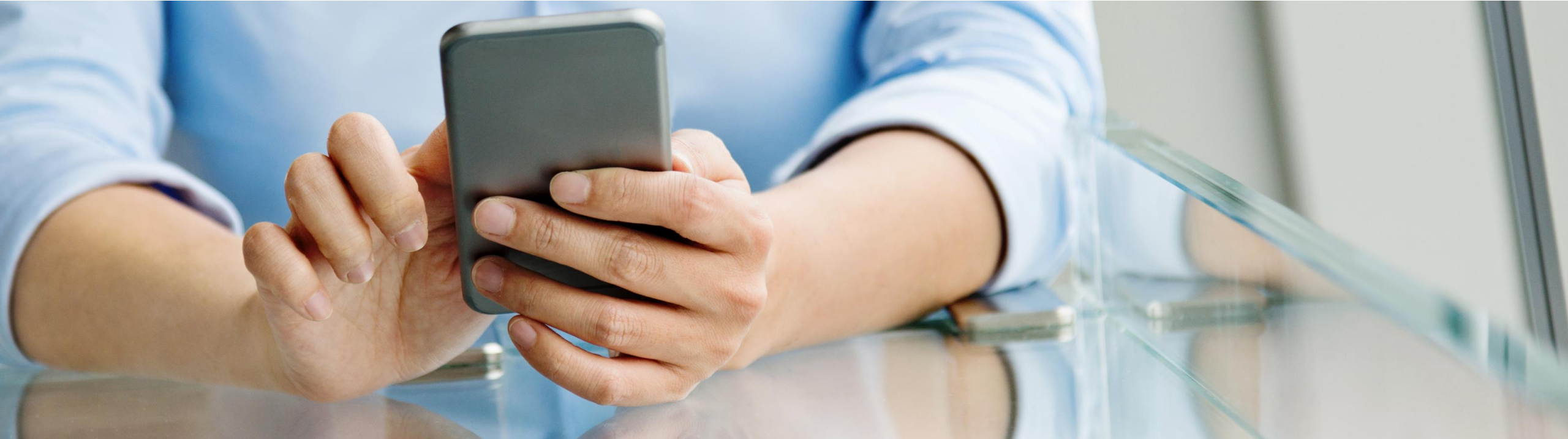


Questions?



Lets Connect!

Either online or here



LinkedIn

Mia: [\(2\) Mia Brøndum | LinkedIn](#)
WindowMaster: <https://www.linkedin.com/company/41637>

Mia Brøndum

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E-mail: MBR.dk@windowmaster.com

A background image showing a close-up of industrial machinery, likely a steam engine or turbine, with various pipes, valves, and mechanical components. The lighting is dramatic, highlighting the textures and metallic surfaces.

Green Energy Export Day _ Sustainable Industry Alliance



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**
The Trade Council

Content

- **Introduction & Sustainable Industry alliance (SIA)**
 - Sustainable Industry Alliance (SIA)
 - Market ask for more solutions
- **North America, a diversified market of possibilities**
 - Political and regional differences
 - Case example
- **Take away, Reach out!**



Introduction

Jacob Dransfeldt

Senior Technical Sector Expert.

Industrial sector, North America.



Facilitate export and market growth for Danish Businesses to North American Market (USA & Canada).

Share market insight from market development, with the food and beverage process sector in the US.



Sustainable Industry Alliance

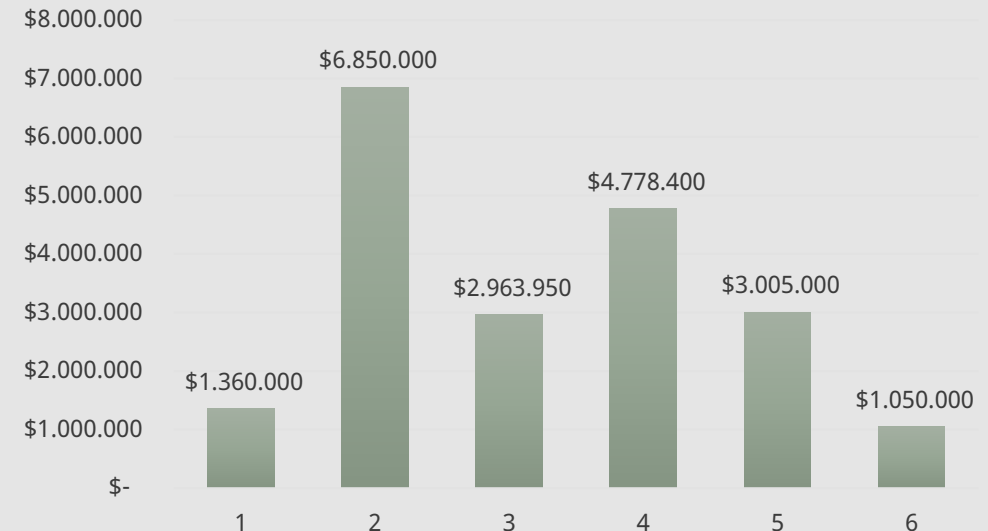
Current 6 companies + TC - technical and commercial advisor

Create value for Danish based companies:

- Market knowledge & insight.
- Company advisory (establishment, market strategy and expansion)
- Customer contact - market feedback.
- Facilitate sales and project development.
- Inspire the market - expand opportunities for export.
- Facilitate networking and create valuable business relationships.



Lead value per Company



Market Demand!

Market ask for more solutions – strengthen the value proposition!

Relevant technology for North American F&B proc. market:

Energy transition:

Industrial heat pump (mid.-high range).

Combined Heat & power solutions.

Renewable energy solutions

Heat recovery systems.

Systems to utilize surplus energy (H./C.)

Energy optimized equipment.

Energy storage.

Smart handling and packaging

F&B handling and packaging systems.

Sustainable packaging.

Sustainable Food or bev. Processing

More efficient pasteurizing equipment

Water saving solutions

Water and energy optimized C.I.P. equipment

Waste water handling.

Water optimized equipment

Other solutions need to be aware of!



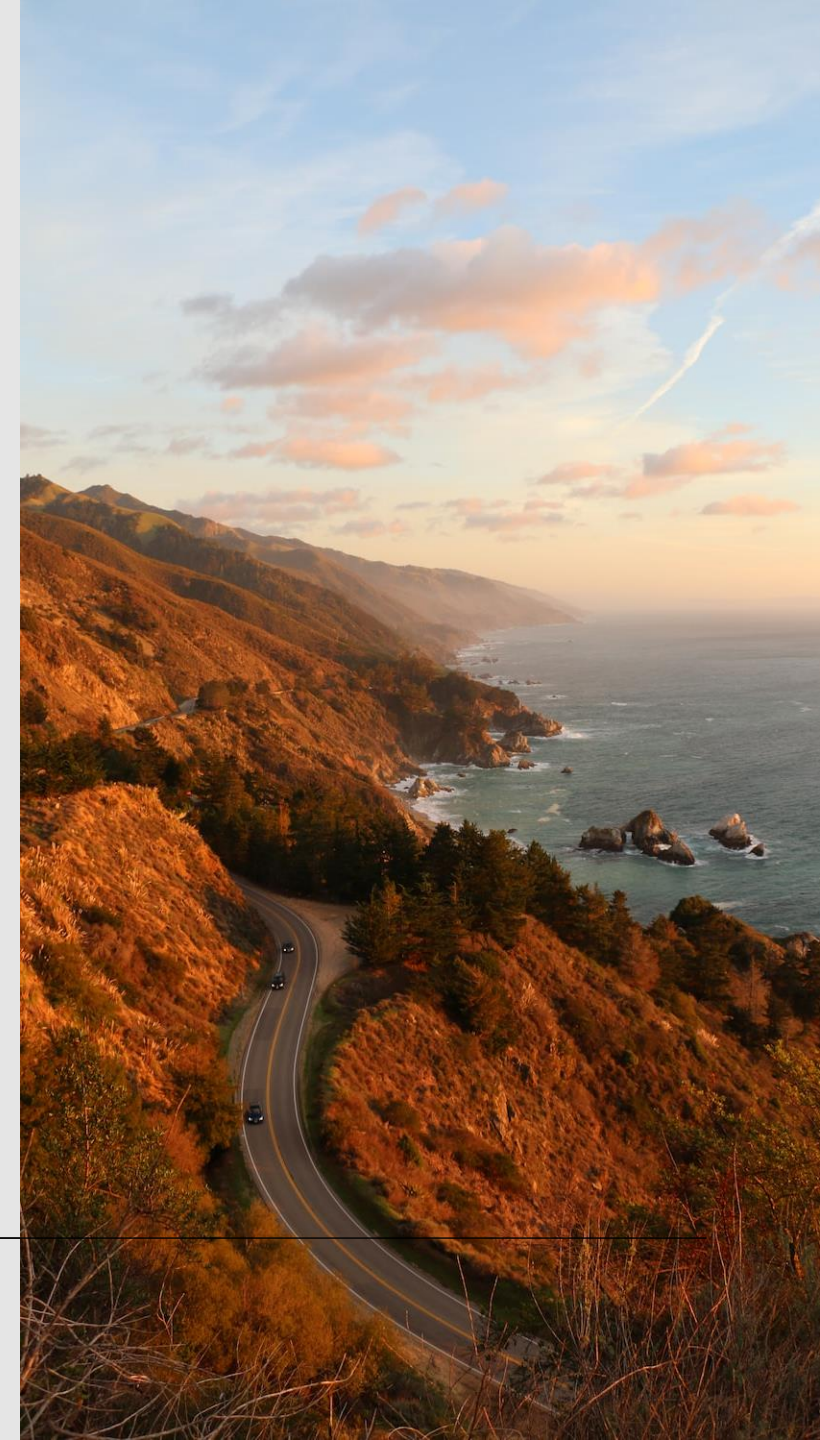
**CONSULATE GENERAL
OF DENMARK**
Silicon Valley

Content

- Introduction & Sustainable Industry alliance (SIA)
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- Market ask for more solutions

- **North America, a diversified market of possibilities**
 - Political and regional differences
 - Case example

- Take away, Reach out!



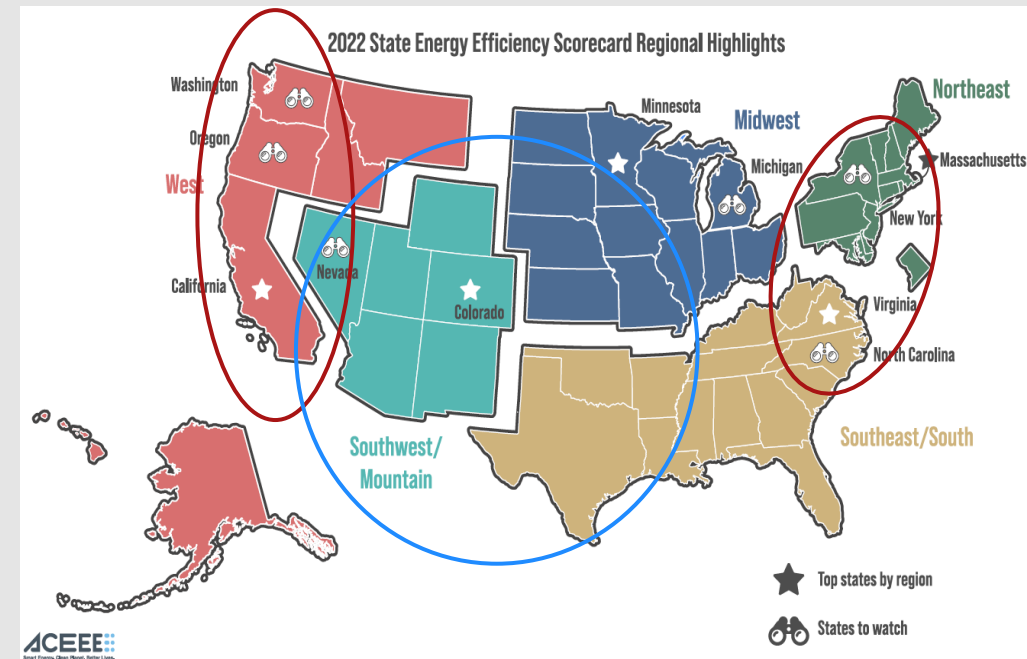
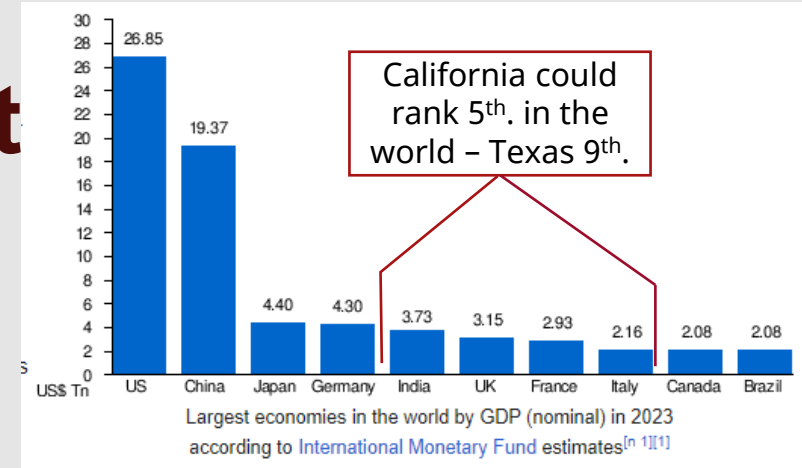
THE DEBATE



North America, a diversified market of possibilities

- Largest economy in the world & largest trade partner for Denmark
- If California and Texas was it's own country, California ranged before India and Texas before Canada.
- Market differs from state to state, depending your target market, Examples:
 - Is energy policies important? energy prices - energy fund programs etc. American Council for Energy Efficient Economy (ACEEE), map of energy efficiency policies in place. (west coast, upper east coast and some mid west states)
 - Water scarcity from west of Mississippi river, to east of rocky mountains + California and Nevada (rule of thumb).
 - Food production, mid-west and west coast.
 - Company organization with own goals, driven by chain responsibility or environmental considerations.

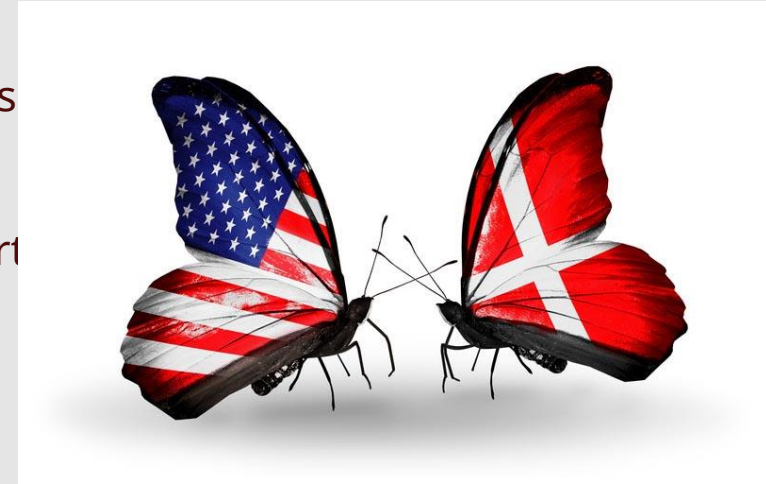
Market drivers is important in your business plan.



North America, a diversified market of possibilities

Political initiatives has a significant influence on the market driver, latest:

- IRA for \$500 billion* – \$400 billion* to climate effort, improve US competitiveness industrial productivity.
- Infrastructure bill for \$1,200 billion* - (Bipartisan infrastructure law for transport infrastructure.
- Equivalent to entire Denmark's GDP - times 4 .
- Available through stats and organization initiatives and project application.
- Already initiated in many places, we see an expansion of support programs and amount of funds available.



*Approximately numbers, as the final budget and plan is work in progress



**CONSULATE GENERAL
OF DENMARK**
Silicon Valley

Case Example: Energy Efficiency

40 pump upgrade project

New pump upgrade

- Price of 40 pumps:
\$500,000.
- Energy savings/year:
460,000 kWh

Project in Texas

TX: Lower utility costs, few funding programs.

Electricity savings/year:
\$55,000.

Available funding (10%):
Tax deduct. program 10%

TX - Project payback of 8,2,
instead of 9,1 years.

Project in California

CA: Higher utility costs, comprehensive funding programs.

Electricity savings/year:
\$100,000.

Available funding (77%):
FPIP, CEC 50%
Utility, PG&E 17%
Tax deduct. program 10%

CA - Project Payback of 1,15
instead of 5 years

Information given in this slide serve as example only: Available programs will varies from state to state, over the year, with individual project and company requirements.



North America, a diversified market of possibilities

Market and opportunities vary from state to state and organization,
- Local politics and regional challenges as most important drivers.

Case examples: If you selling energy optimization, it makes a difference if your product offers a pay back of 8, 5 or 1,15 years.

Take away:

- North America is a large and diversified market, many possibilities.
- Business alliances are good for market expansion, more customer sales channels
- You can't know everything, connect with a local partner and/or advisor.

Welcome to reach out, to talk more specific about exports to North America



CONSULATE GENERAL
OF DENMARK
Silicon Valley



Reach out



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**CONSULATE GENERAL
OF DENMARK**
Silicon Valley



**Sustainable
Industry
Alliance
Thank You!**



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**
The Trade Council

Green Energy Export Day.

Grundfos experiences with energy efficient products in the American market

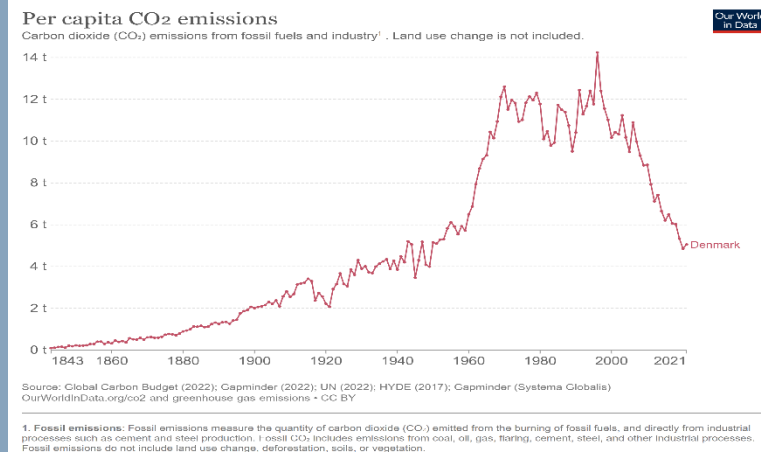
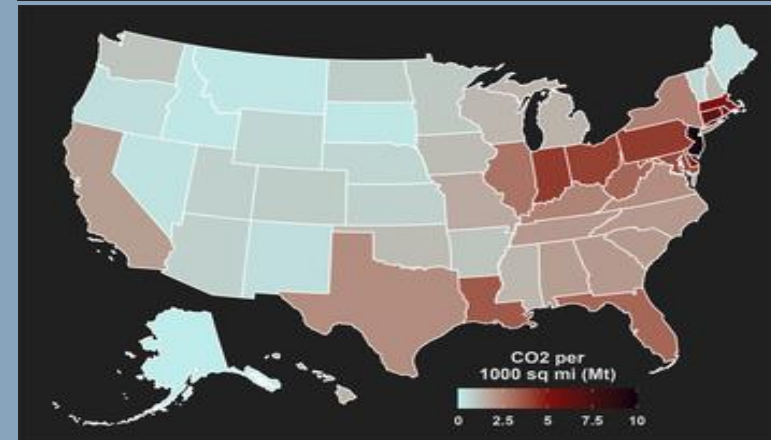
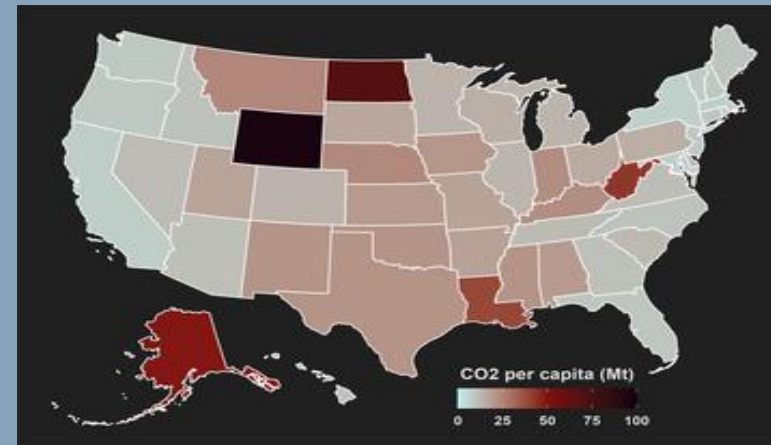
Michael Skovgaard Jensen. 29th of Aug. 2023.

GRUNDFOS 

Possibility in every drop

Content

- I. Grundfos Sustainability Framework
- II. Grundfos division
- III. Energy efficient products approach per division
- IV. A couple of examples



Our Climate Action is Anchored in our Sustainability Framework



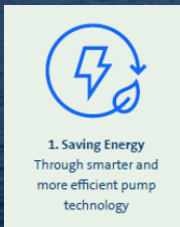
Grundfos follow four steps to maintain the incremental progress:

- **STEP 1 NEAR TERM TARGET**
- Scope 1&2: 50% Absolute Reduction
- Scope 3: 25% Absolute Reduction

- **STEP 2 LONG TERM TARGET**
- Scope 1, 2 and 3:
- > 90% Absolute Reduction

- **STEP 3 BEYOND VALUE CHAIN**
- To advocate and invest carbon reduction action beyond direct value-chain mitigation

- **STEP 4 NEUTRALIZATION**
- Neutralize remaining emission through Carbon capture and/or afforestation



1. Saving Energy
Through smarter and
more efficient pump
technology



Approved science-based net-zero targets

By 2030

Reduce absolute scope 1 and 2 scopes Greenhouse Gas (GHG) emissions 50%

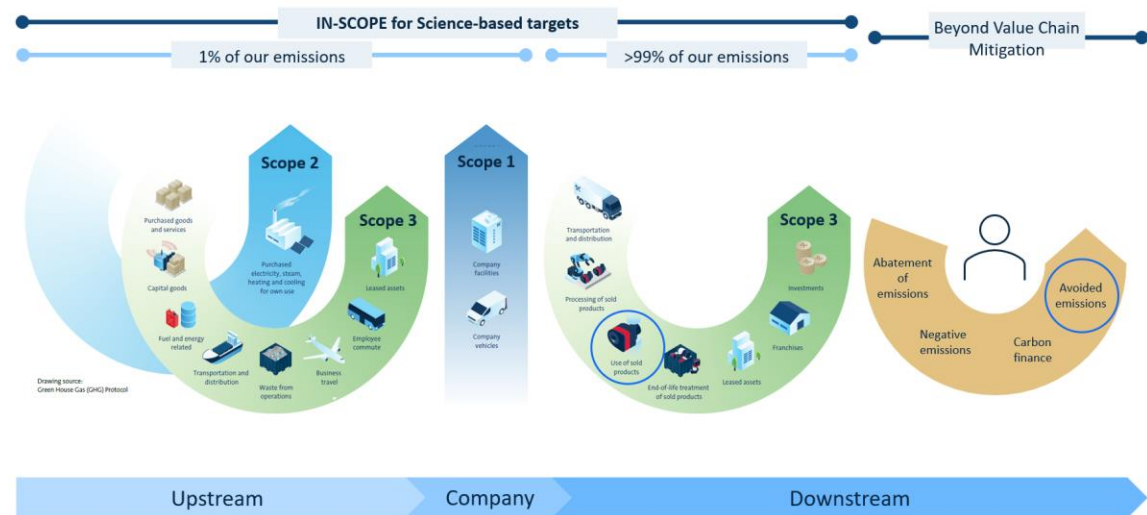
Reduce absolute scope 3 GHG emissions 25%

By 2050

Reduce absolute scope 1, scope 2, and scope 3 GHG emissions 90%



What is our Science-Based Target covers?



Grundfos Focus on Energy Efficient Offerings



Industry Division

Energy focus. Reduction of CO₂ footprint and reduction of OPEX

Typical offering Base-lining: Energy audit. Products: Demand driven control (E-pumps and process control)

Industry focus: Water intensive F&B factories



WU Division

Energy focus. Reduction of CO₂ footprint and reduction of OPEX in distribution. Reduction of Non-revenue water

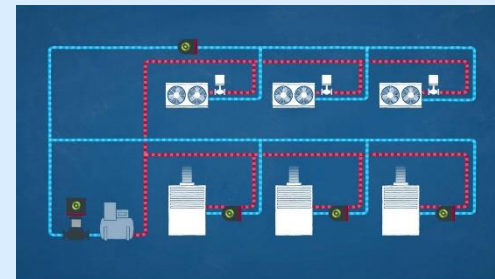
Typical offering: Demand driven distribution (intelligent pressure management), Metasphere (remote monitoring)



CBS Division

Energy focus. Reduction of CO₂ footprint and reduction of OPEX in cooling system.

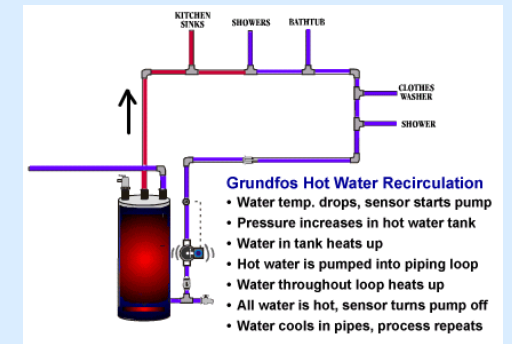
Typical offering: Base-lining: Energy audit. Products: Demand driven control (E-pumps and process control). Distributed Pumping (no valve losses/Demand driven)



DBS Division

Energy focus. Reduction of CO₂ footprint and reduction of OPEX in cooling system. Reduction of hot water spill (Hot water circulation)

Typical offering: Demand driven control (intelligent circulators)



Cases.



Customer and the challenge



Customer: Leprino Lubbock , TX. Leprino Foods

Leprino is building a new 85.000 m². The factory should be as energy efficient as possible. Main applications in a cheese plant is Boilers for steam, Cooling systems for process and building and circulation of water for cleaning and other purposes

Resolution



Contractor for the project is Dilling group. Consultant engineer is Mead&Hunt.

Two decision makers from Leprino participated in the **SIA fact finding tour** and was introduced to Grundfos **products, values and sustainability focus**.

Grundfos was selected to supply pumps for Boilers, Circulation and chemical treatment. (Cooling was provider by a competitor as a lower cost solution (not as efficient)). The product has been delivered through or partner/distribution.

Customer and the challenge



Customer: Hilmar Cheese, CA.

Hilmar Cheese have a long tradition for working with sustainability (first sustainability report came out in 2010). Grundfos performed one of our first baselining jobs with Hilmar. This job is specifically for their boiler systems.

Resolution



Hilmar needed to estimate how much the energy savings potential was for their boiler systems. This in order to estimate the CO₂ footprint impact and the OPEX savings, but also to be able to apply for **funding through California Energy Commission Food Production Investment Program (CEC-FPIP)**.

Grundfos established via the **Energy Check consultation** a yearly saving potential of 342 tKWh (167 kg CO₂) and 31tUS\$ via energy efficient pump offerings (**Grundfos E-pumps**). The solution consist of **8 CR-E pumps** with demand driven controls.



GREEN ENERGY EXPORT DAY 2023

WORKSHOP: ENERGY EFFICIENCY IN USA

Dialogue: How do we most efficiently utilize the opportunities within EE in USA?

Panel

- **Mille Munksgaard**, Project Manager, DI USA
- **Mia Brøndum**, Chief Business Development Officer, WindowMaster
- **Jacob Outzen Dransfeldt**, Danish Consulate General, Silicon Valley
- **Michael Skovgaard**, Business Development Director, Americas/WT, Grundfos

Moderator: **Emilie Mørup**, Global Market Development Advisor, Confederation of Danish Industry





UDENRIGSMINISTERIET
The Trade Council

ENERGY EFFICIENCY ALLIANCE FOR COMMERCIAL BUILDINGS IN SOUTHEAST ASIA

AUGUST, 2023

Scope & Countries

Commercial buildings (e.g. includes hotels, hospitals, airports, and malls) in:

- Vietnam
 - Thailand
 - The Philippines
 - Singapore
-
- Including access to insights & best practices from Indonesia w.r.t. development of financing models for energy efficiency projects of government buildings



Why Southeast Asia?

- USD 900 billion needed in energy efficiency investments to meet national energy reduction targets.
- 50% of annual new global building stock is constructed in Asia.
- Countries in Southeast Asia are setting ambitious energy reduction targets:
 - Vietnam, carbon neutral by 2050
 - Thailand, carbon neutral by 2050
 - Singapore, net-zero emissions by 2050
 - Philippines, 75% GHG reduction by 2030
 - Indonesia, net-zero emissions by 2050



Why Join “Team Denmark”?

- Increase your exports together with complimentary solution providers through:
 1. Trade Council’s connections to major private sector building owners and synergies with G2G programmes.
 2. Access to project opportunities with critical mass and replicability through technical audits.
 3. Access to insights and best practices on financing.

Supported by



Green Advisory Pool by EIFO

Key 12 Month Deliverables

1. Identifying energy & cost saving opportunities

- Alliance members will jointly decide on which buildings to target. The current shortlist includes hotels, hospitals, airports, and malls.
- The Trade Council will be responsible for shortlisting and pre-vetting private sector counterparties.
- The alliance targets two in-depth on-site energy audits per market within the first 12-month period. The audits are funded by EIFO's Green Advisory Pool.

2. Presenting private sector counterparties with energy savings opportunities

3. Increasing exports

- Through technical audits, aggregating and replicating technical solutions and know-how
- TC support through an alliance
- Synergies with G2G programs where relevant.

Contact us for more information, pricing and practicalities



- Mark Perry
- Head of Trade, Singapore
- E-mail: markpe@um.dk



- Reza Dadufalza Goyeneche
- Head of Trade, Philippines
- E-mail: rezgoy@um.dk

Other Activities in Southeast Asia

- Indonesien, Jakarta: TC Jakarta and DI will arrange a common booth at the energy fair Enlit in Jakarta in November. ENLIT is the main fair in Asean within renewables energy-systems -efficiency solutions etc. Both before and after a business program is under development. Here The new Eifoguarantee facility aiming at 1 bn Euro for green transition in Indonesia will be in focus. Enlit Asia Jakarta 2023
- Pakistan: A business delegation to Islamabad and Karachi focusing on RE and EE is planned to take place in week 44. Energy (RE-EE) Delegation to Pakistan (danskindustri.dk)
- Thailand: Energy Efficiency Delegation to Bangkok – Spring 2024.
- Signup through DI



UDENRIGSMINISTERIET
The Trade Council

GREEN ENERGY EXPORT DAY 2023 – PROGRAMME

SALEN

13+15

19

17

HOUSE OF GREEN



08.30 MARKET PLACE OPENS

08.30 WORKSHOP #0

WIND ENERGY
EGP KOREA/JAPAN

10.00 OPENING: DANISH ENERGY EXPORTS - OUR PROMISE TO THE GLOBAL CLIMATE AND DANISH ECONOMY

10.45 MARKET PLACE – COFFEE

11.15 WORKSHOP #1

WIND ENERGY
GLOBAL MARKET OUTLOOK

DISTRICT HEATING
NETHERLANDS

ENERGY EFFICIENCY
USA (+ASIA BRIEF)

GREEN HYDROGEN
DANISH EXPORT CASE

DENMARK-INDIA
GREEN PARTNERSHIP

12.15 MARKET PLACE - LUNCH

13.00 WORKSHOP #2

WIND ENERGY
SCALING UP FOR EXPORTS

DISTRICT HEATING
GERMANY

ENERGY EFFICIENCY
EUROPE

GREEN HYDROGEN
USA

BIOENERGY
EUROPE (DE+PL)

14.00 MARKET PLACE – COFFEE

14.30 WORKSHOP #3

WIND ENERGY
MARKET MATURITY

REBUILD UKRAINE
BUSINESS / FINANCE

ENERGY EFFICIENCY
GERMANY

GREEN HYDROGEN
EUROPE

BIOENERGY
USA

15.30 AMBASSADOR'S ROUNDTABLE: SEIZE THE OPPORTUNITY

16.00 RECEPTION AT TOP TERRACE





GREEN ENERGY EXPORT DAY 2023



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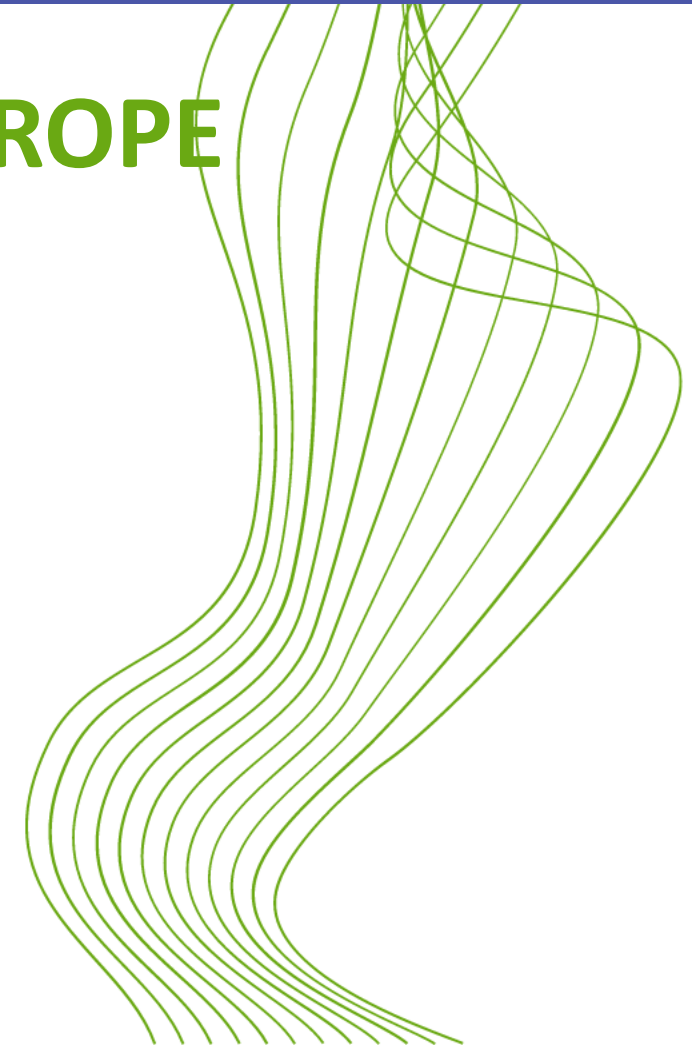


GREEN ENERGY
EXPORT DAY 2023

WORKSHOP:

ENERGY EFFICIENCY THROUGHOUT EUROPE
– Perspectives from Poland & the
Netherlands

WELCOME





GREEN ENERGY
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ENERGY EFFICIENCY THROUGHOUT EUROPE **– Perspectives from Poland & the Netherlands**

Programme

Energy Efficiency in Poland:

- **Katarzyna Wojda**, Green Transition Expert, Embassy of Denmark in Warsaw
- **Frederik Thure**, Head of Danfoss EU Office, Danfoss

Energy Efficiency in the Netherlands:

- **Troels Strandby**, Advisor, Danish Energy Agency
- **Susanne Dyrbøl**, Public Affairs Director, Rockwool

Discussion: How do we reach the EU targets put forth in the *fit for 55* package?

Moderator: **Gry Klitmose Holm**, Senior Project Manager, State of Green





**ROYAL DANISH
EMBASSY**
Poland

DENMARK IN POLAND

Green Energy Export Day – 29 august, 2023
ENERGY EFFICIENCY WORKSHOP

ENERGY IN POLAND - Quote



*Despite its **notable successes** in clean energy and energy security, Poland remains heavily reliant on fossil fuels.*

Considerable work needs to be done across all sectors to meet the country's targets for increasing the share of renewables and reducing emissions.

Dr. Fatih Birol
Executive Director
International Energy Agency

Source: IEA ENERGY POLICY REVIEW 2022



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POLAND IN FIGURES

POPULATION: 37.91 million in 2021

GDP GROWTH RATE: 5.1% in 2022, 0.7% in 2023, 2.7% in 2024

ENERGY INDEPENDENCE: 55.5%

UNEMPLOYMENT 3.3% IN 2023

INFLATION: 11.7% IN 2023

Source: Ener data EU Commission

ENERGY IN POLAND – OVERVIEW



- **85% of Poland's TES - fossil fuels**
- **11% of the country energy mix - RES**
- **Poland's GHGs emissions increased in 2022 by 0.3% from 2021**
 - ❑ April 2022 - ban on transporting coal from Russia to Poland
 - ❑ May 2022 - REPOWER EU - decreasing import from Russia
 - ❑ February 2023 - Russia stopped exporting oil to Poland.
 - ❑ July 2023 - the EE DIRECTIVE amended - 11.7% collectively by 2030, **intensifying holistic focus on Energy Efficiency as the first fuel**

[#energyefficiency](#) recognised at EU level as a cost-effective solution to decarbonize our economy and reduce energy consumption and, last but not least - improve energy security and reduce energy poverty.

ENERGY EFFICIENCY FIRST as fundamental principle



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ENERGY AND CLIMATE GOALS IN POLAND



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STRATEGIC DOCUMENTS:

1. **NECP 2021-2030**, 18.12.2019
2. **PEP 2040**, adopted 2.02.2021
3. **'Poland's National Recovery and Resilience Plan (NRRP)**, submitted to the European Commission on 3.05.2021
4. **Long-term Strategy for Renovation of Buildings** adopted 9.02.2022

STRATEGIC targets

- **RES (according to NCEP)** – achieve 23% of RES in the final gross energy consumption by 2030
- **Energy Efficiency:** Reduce final energy consumption by **23% by 2030** (in relation to primary energy consumption according to the PRIMES 2007 forecast, which corresponds to primary energy consumption of 91.3 Mtoe in 2030.
- **CO2 emmissions reduction – 7%** in non-ETS sectors by 2030
- **60%** reduction of coal usage in el production

POLISH GOALS:

- ❑ **EE - 23% BY 2030 –**
Enormous potential in buildings/heating systems and transport
- ❑ **RES – 23% BY 2030**
- ❑ **CO2 REDUCTION – 7% BY 2030**

Source: Eurostat and the EU Commission



EE POTENTIAL VS MEASURES

• EXISTING:

- White certificates EE system (since 2011)
- EPC Certificates, valid 10 years
- CEEB (Central Building Emissions Register, July 2021)
- Clean Air programme 2018-2029, EUR 22.7 billion
- 'Stop smog' programme
- Income tax deduction for termomodernisation
- 'My electricity' programme (PV subsidies)
- 'Let's lighten up Poland', 2023

• EXPECTED:

- PEP 2040 revision started in 2023 (4th pillar)
- NECP – revision needed
- ETS II for buildings in 2027
- 'Green list' for construction materials and products

EE/ RENOVATION POTENTIAL IN PL:

- 14.2 million buildings
- 61% residential (1/3 built before 1980, final energy demand higher than 200 kWh/m² per year)
- 34% private service sector buildings
- 5% public buildings
- 7% of all buildings (More than 1 million buildings) were built before 1918 and have a final energy demand higher than 300 kWh/m² per year.

Source: IEA, Poland 2022, Energy Policy Review



CHALLENGES & OPPORTUNITIES

- **DEFRAGMENTED POLICIES – holistic approach needed**
 - Energy efficiency policies and measures Poland has a wide variety of policies and measures to encourage energy efficiency, most with a sectoral focus (buildings, industry or transport).
 - Responsibility for energy efficiency policy design and implementation of measures is divided between several ministries and a wide range of administrative entities, generally based on their sectoral competency.
 - The EPP2040 includes a specific objective (Objective 8) for improving energy efficiency (mainly in buildings and transport), and another objective (Objective 7) for the development of district high-efficiency heating and co-generation.
- **FINANCE ESTIMATES**
 - **EUR 195 billion – by 2030** - the Polish government estimates that modernising the energy sector and achieving the NECP's 2030 targets will require EUR 195 billion from 2021 to 2030 (around 3.5% of annual GDP)
 - **EUR 350 billion by 2040** – the estimated cost of energy transition from 2021 to 2040. The majority of public funding for the energy transition in Poland is expected to come from a variety of EU mechanisms, but national funds will also provide notable funding.
 - **EUR 72 billion for Poland's energy transition by 2030** - the government expects that EU and national funds will provide the 72 billion EUR of public funding.

**PUBLIC FUNDING
FOR POLAND'S ENERGY
TRANSITION:**

**72 BILLION EUR
BY 2030**

Source: IEA, Poland 2022, Energy Policy Review



RECOVERY PLAN – INVESTMENTS IN THE ENERGY EFFICIENCY

Economic resilience and competitiveness

- In total 4.7 bil. euro

Green energy and reduction of energy intensity

- In total 14.3 bil. euro

Efficiency, accessibility and quality of the health care system

- In total 4.5 bil. euro

Digital transformation

- In total 4.9 bil. euro

Green, intelligent mobility

- In total 7.5 bil. euro

• Energy efficiency in residential buildings

- "Clean Air Program"
- Both single- and multi-family houses.
- Thermal modernizations, RES installations and replacement of inefficient sources for heat.
- Total 3,201 mil. euro.

• Investment in heat sources in district heating systems.

- Heat and energy management with the use of modern technologies in district heating.
- Incinerations, district heating and heat pumps.
- Total 300 mil. euro.



• Thermal modernization of schools

- Deep, comprehensive thermo modernization including insulation, replacement of windows etc.
- Modernization of internal heating systems.
- Total 290 mil. euro.

• Passive buildings for social activity

- Energy renovations of social buildings like libraries and community centers.
- Identification of the buildings with the lowest energy efficiency.
- Total 67 mil. euro

• Green transformation of cities

- Total 2,800 mil. euro.



ENERGY IN EUROPE – MOMENTUM



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The Trade Council

Rapporteur for the Energy Performance of Buildings Directive [Ciarán Cuffe](#) (Greens/EFA, IE) said:

*“Soaring energy prices have put the **focus on energy efficiency and energy saving measures. Improving the performance of Europe’s buildings will reduce bills and our dependence on energy imports.**”*

*We want the directive to **reduce energy poverty and bring down emissions, and provide better indoor environments for people’s health.** This is a growth strategy for Europe that will deliver hundreds of thousands of good quality, local jobs in the construction, renovation, and renewable industries, while improving the well-being of millions of people living in Europe.”*

Source: www.europarl.europa.eu/news/en/press-room

EED DIRECTIVE AMMENDED:

- Replaces the 2018 version, with stronger, more coherent goals:
- Aims to reduce EU's energy consumption by **11.7% by 2030**
- By doubling the yearly targets to **1.49% in 2024-2030**
- Introduces the model role of public sector imposing the yearly energy reduction goal of 1.9%
- Introduces the necessity of public building renovations at the level of 3% of the buildings yearly
- Introduces the definition of energy poverty giving the EE priority for sensitive clients / low income households

Source: Ener data
EU Commission

POLAND – ENERGY EFFICIENCY - YOUR FOCAL POINT



UDENRIGSMINISTERIET
The Trade Council

NINA HVID ENEVOLDSEN

Head of Trade, Ministry of Foreign Affairs, Denmark



KATARZYNA WOJDA

GREEN TRANSITION EXPERT

Energy

Speaks: Polish & English



Connect on



Questions?

Interested in Poland?

Contact us @ danish embassy
in warsaw, trade department



**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**
The Trade Council

THANK YOU

Katarzyna Wojda
katwoj@um.dk



Business perspectives in Poland

**Frederik Thure, Head of Danfoss EU Office,
on behalf of
Danfoss**



2022 was also a year with significant challenges



Important positive **signals** impacting business decisions

Reshore production

Reconsider their manufacturing footprint



Energy Crisis

Accelerates industry decarbonization



Sustainability

ESG is the future license to operate



Moving production back to Europe

hot topic for international companies

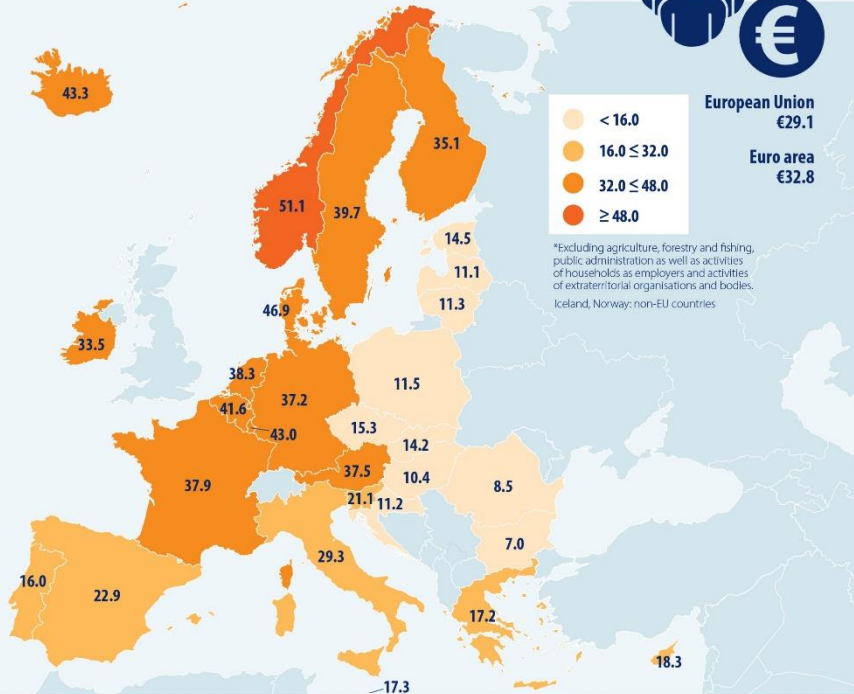
- 60% of the companies expect in the next 3 years to move part of their Asia production **back to Europe** or US
- CEE region is a favorite (particularly Czech Republic, **Poland**, Hungary) as a new location
- Coming years will show an **acceleration of automation and robotization**



Poland keeps attracting new factory footprint

Hourly labour costs in €

2021, for whole economy* (enterprises with 10 or more employees)



European Union €29.1
Euro area €32.8

*Excluding agriculture, forestry and fishing, public administration as well as activities of households as employers and activities of extraterritorial organisations and bodies, Iceland, Norway: non-EU countries

Administrative boundaries: © EuroGeographics
© UN-FAO © Turkstat
Cartography: Eurostat - IMAGE, 3/2022

ec.europa.eu/eurostat



- Poland is still cost-competitive in the European market
- Located in the heart of Europe
- Skilled workforce



Danfoss production in Poland

ZELAZKOWO

Danfoss Poland

140 employees

Production: Heatings

- seals and rubber flanges for plate heat exchangers

TUCHOM

Danfoss Poland

140 employees

Production: Heating

- rubber seals and flanges for plate heat exchangers

GRODZISK MAZOWIECKI

Danfoss Poland

1398 employees

Production: Commercial Refrigeration and industrial, Water sector and Heating

- Hall No. 1: switches, pressure valves, water valves
- Hall No. 2: heating mats and cables, DeviDry, electronic radiator thermostats
- Hall No. 3: solenoid valves (EVR), electric control valves (CCM/CCMT)

POLAND, EER



Employee number
December 2022

1678

But...

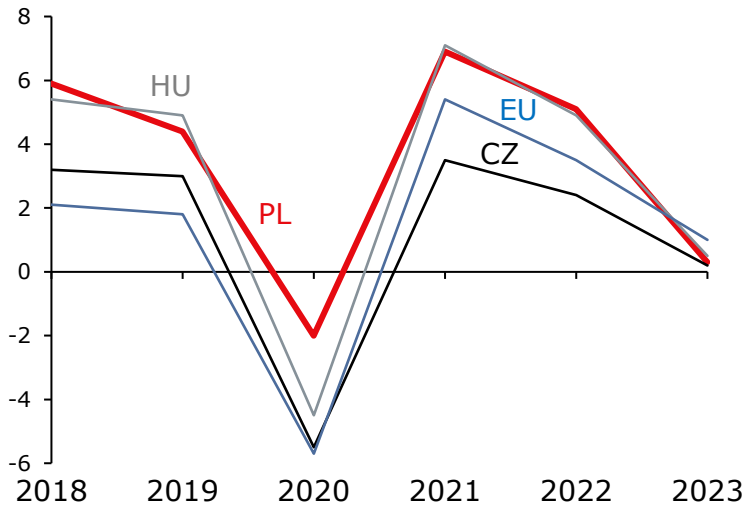
Less-than-positive outlook for CEE

PL and HU impacted by lack of EU Funds

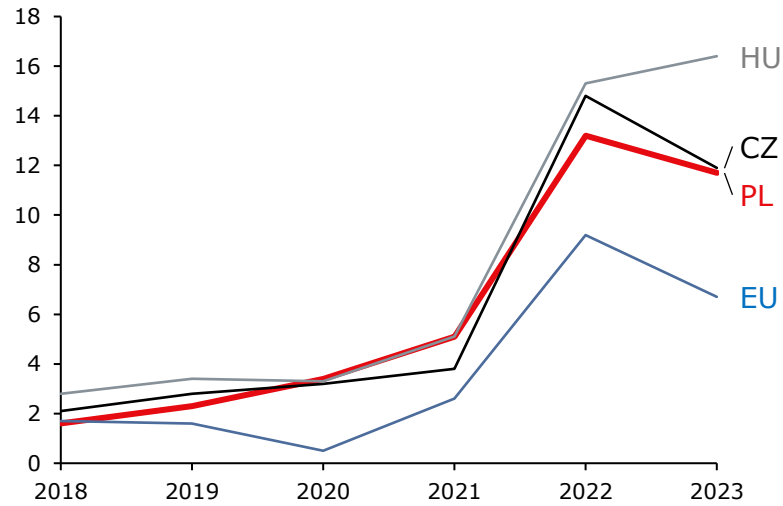
One of the highest inflation in EU

Polish parliamentary election
October 15th, 2023

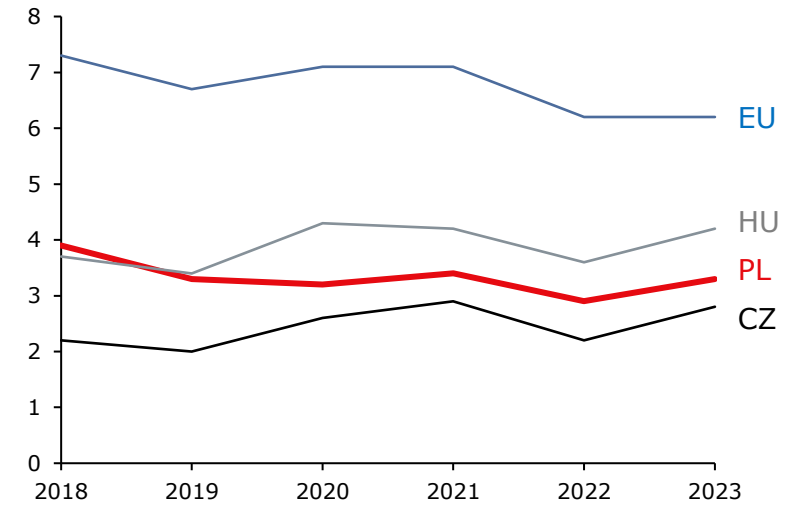
GDP



Inflation



Unemployment



Comments

- PL and HU low forecast due to lack of EU Funds
- EU GDP drop impacts the GDP level in EER countries (EER as production base for western countries)

Comments

- Double digit level in EER, higher than EU average
- After peak in 2022 started dropping down (global trend)
- Impacted production and labor cost in EER

Comments

- Pressure on employers (low unemployment in PL, CZ)
- Long recruitment process – lack of experts
- Demography aspect – society is getting old

Lessons learned:

LESSONS LEARNED:

- **Covid-19 pandemic**
 - High adaptability
 - Quick transfer to digital solutions
- **Sensitive to support schemes**
 - Suspended Recovery Fund in heavily impacted business sentiments



Source: naukawpolsce.pl

OPPORTUNITIES:

- **Modernizing building stock**
 - 70% of buildings are not efficient
 - 1 mln buildings (out of 5,5mln) require immediate action
- **Decarbonizing industry**
 - ESG
 - Energy prices (one of the highest in Europe)





**ENGINEERING
TOMORROW**



Green buildings in the Netherlands

Opportunities on the path to net-zero

Troels Strandby Nielsen,
Advisor,
Danish Energy Agency

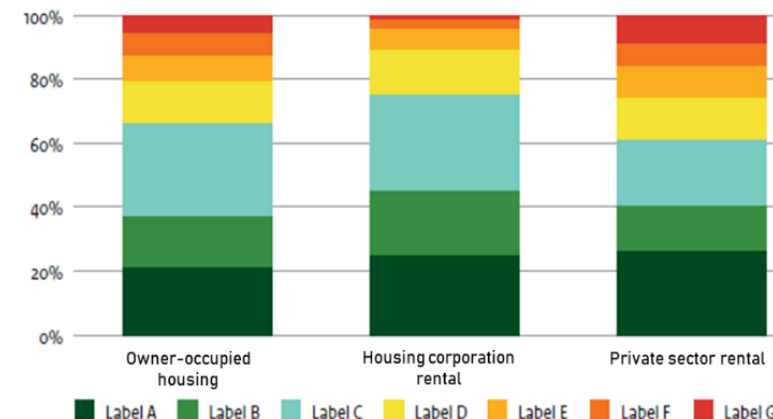
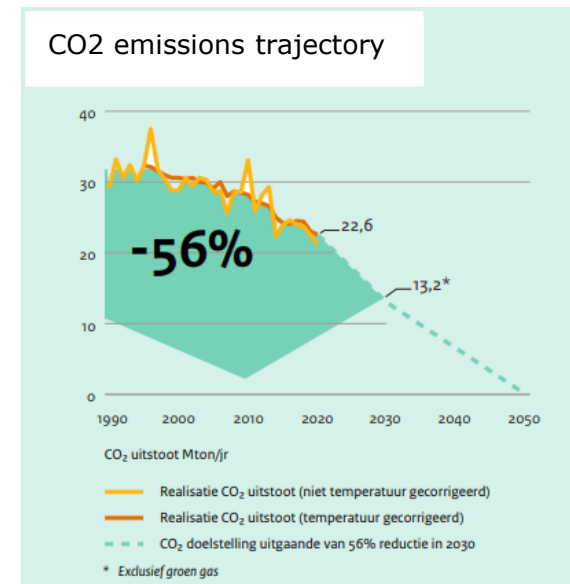


The Dutch built environment is up for a transition

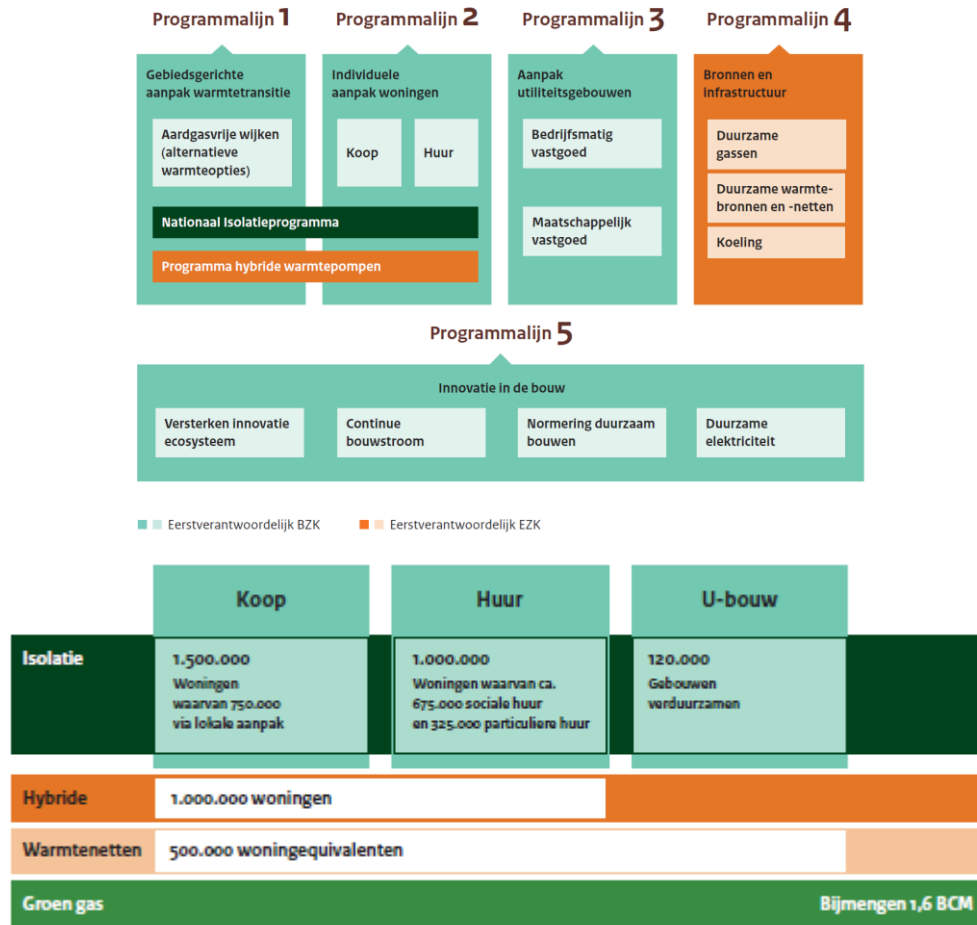
Having been a natural gas country for +60 years, the Netherlands is going 'natural gas free':

- From 9 out of 10 buildings connected to natural gas
- To fossil free heating by 2050.
- Built environment one of five key sectors w/ own emissions reductions target (56% by 2030, 11,5 Mtons or twice the amount of 1990-2020).
- 1,5 mio. Dutch homes have a label D or worse
- Only 18% of Dutch non-residential buildings have an energy label.

However, on July 7th the government announced its disbandment. What will follow is likely a difficult cabinet formation.



No heat transition without renovations in existing buildings



In order to address the needs of the building stock, a policy programme was launched in 2022 to set the framework conditions in view of 2030. The ambitions are sky high:

- 2,6 mio. energy renovations in private and rental homes.
- 1,5 mio. conversions – both ‘hybrid heat pumps’ and district heating.
- €13bn public funding for subsidies, financing, administration, and regulatory changes.
- Economic Institute for the Built Environment: At least €40bn investments needed for energy renovations alone.

With changing parliamentary dynamics a likely outcome of the coming elections, there are question marks related to the longevity of the former governments’ initiatives.

Questions for the Netherlands in the coming years

- *What kind of stance will a new government take on climate & energy policy?*
- *To what extent will market parties 'take the lead' or 'drag their feet' while waiting for a new policy direction?*
- *If not natural gas free, what else?*

Some challenges we try to address with EGP

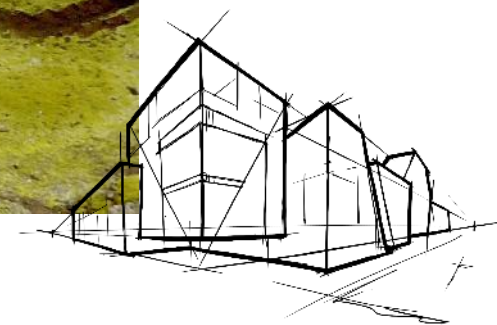
- *Strategies to accelerate the roll-out pace for heat pumps*
- *Programs for optimizing the installation quality of heat pumps*
- *How to engage with and communicate to local communities about the transition*
- *How to address the building stock when carrying out a heat transition*



Thank you

ROCKWOOL in the NL

August 29, 2023
Susanne Dyrbøl



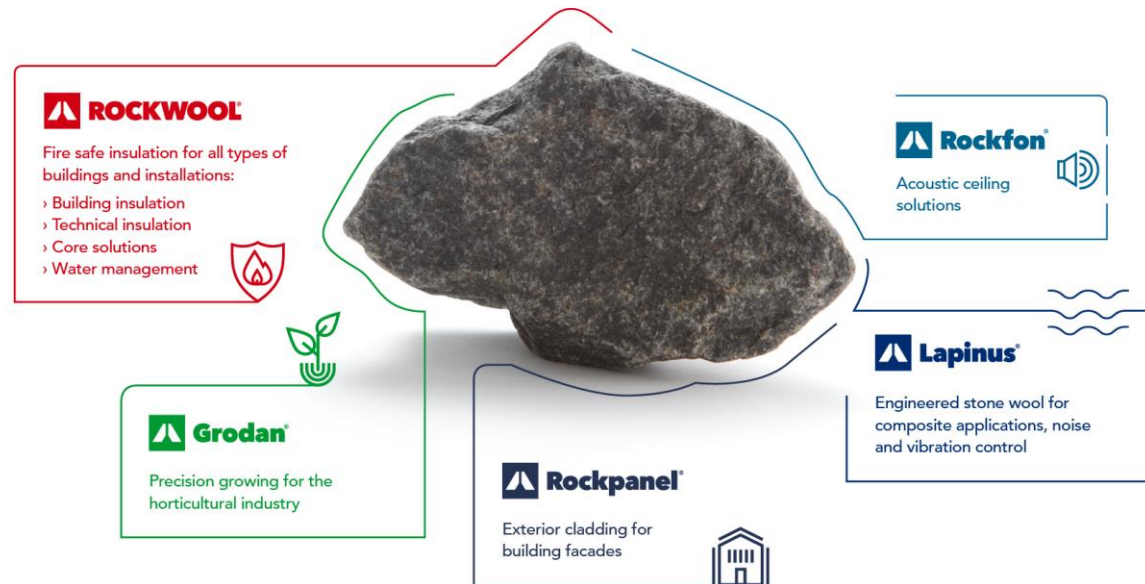
Roermond is the largest and most diversified production location in the ROCKWOOL Group

Multiple factories in one plant

- 4 Stone wool production lines
- 5 "Confection" lines
- ±1200 employees of which ± 850 in factory

Five brands with one common purpose

To release the natural power of stone to enrich modern living.



Regulatory drivers for energy efficiency

New NL Government ?

EU Directives (EPBD & EED)

New buildings

- New NZEB requirements from 2025 - based on cost optimal study

Renovation

- Deep renovation (>25% building envelope) → new build requirements (thermal)
- Max. C-label for offices mandatory as of 01-01-23 (1-7-22 only 48% complied)
- *Min insulation 'Standard' for housing to qualify for sustainable heating without natural gas (no-regret level)*
- National Insulation Program (MEUR 4.000 until 2030): insulate 2.5 million homes with focus on poorly insulated homes with energy labels E, F and G

Incentive programs

NL

Programms run until 2030

Investment subsidy for sustainable energy and energy saving (ISDE) ***(1)**

- The Investment Subsidy for Sustainable Energy and Energy Saving (ISDE) is an allowance for the purchase of insulation measures, solar boilers or heat pumps, among other things.
- 2023: 350 MEUR (+97 MEUR compared to 2022, budget is determined annually. Runs till 2030

Abolishing the landlord levy ***(2)**

- The costs for housing associations will be structurally reduced by approximately 1.700 MEUR per year. This gives housing associations extra investment space. Also meant for far-reaching sustainability of more than 675,000 homes (46.000 MEUR).
- This gives housing associations extra room for investment, enabling them to realize the total investment target of 119.000 MEUR in the period 2022-2030.

National Insulation Program ***(3)**

- The goal of the National Insulation Program is to insulate 2.5 million homes with a focus on poorly insulated homes with energy labels E, F and G.
- Budget 2023: 300M EUR Until 2030: 4.000 MEUR

NL

*(1)

The Investment subsidy for sustainable energy and energy saving (ISDE) will be available to more people from 2023. For example, there will soon be a subsidy for homeowners who have taken one insulation measure (was two). And the period within which an application must be submitted has been extended to 24 months.

*(2)

The abolition of the landlord levy will give housing associations extra room for investment, enabling them to realize the total investment target of 119.000 MEUR in the period 2022-2030.

For this period, National Performance Agreements have been made about doubling the production of social rental homes (62.000 MEUR), far-reaching sustainability improvements to more than 675,000 homes (46.000 MEUR), rent moderation and a mandatory rent reduction for the lowest incomes (11.000 MEUR). Investments are also being made in home improvement and tackling damp and mold problems.

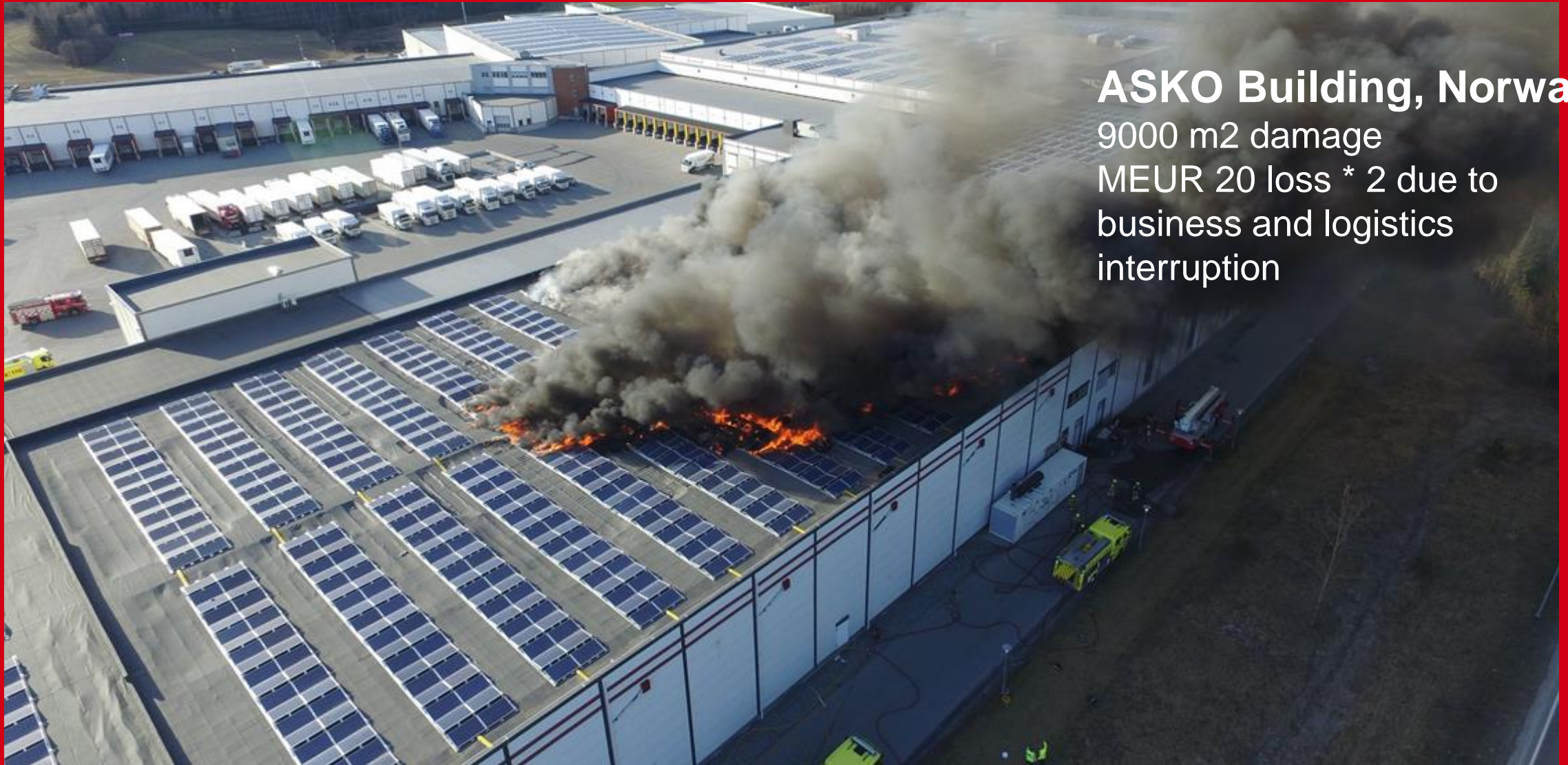
*(3)

The National Insulation Program also mentions mandatory sustainability when buying and/or selling a home. An obligation to make the home that changes ownership more sustainable, for example to a predetermined energy label, has not yet been worked out.

Natural gas phase out

- Ban on connecting new buildings to natural gas
- Making existing homes natural gas-free:
 - By 2050, nearly 7 million homes and 1 million other buildings must be natural gas-free
 - 64 natural gas-free neighbourhoods (pilots). Provide knowledge and experience with insulation, other heating techniques and housing types
 - Budget 2018-2030: MEUR 435 for the Natural Gas-Free Neighborhoods Programme
 - Up to 2030, the Climate Agreement stipulates that 1.5 million homes and other buildings will be made more sustainable. The Gas-Free Neighborhoods Programme wants to disconnect approximately 50,000 homes, offices and shops from the natural gas network and make them more sustainable
 - The program gives the government insight into how to make neighborhoods gas-free in 2050

New Technologies - New Risks



ASKO Building, Norway

9000 m² damage
MEUR 20 loss * 2 due to
business and logistics
interruption



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– Perspectives from Poland & the Netherlands

Dialogue: How do we reach the EU targets put forth in the *fit for 55* package?

Panel

- **Katarzyna Wojda**, Green Transition Expert, Embassy of Denmark in Warsaw
- **Frederik Thure**, Head of Danfoss EU Office, Danfoss
- **Troels Strandby**, Advisor, Danish Energy Agency
- **Susanne Dyrbøl**, Public Affairs Director, Rockwool

Moderator: **Gry Klitmose Holm**, Senior Project Manager, State of Green



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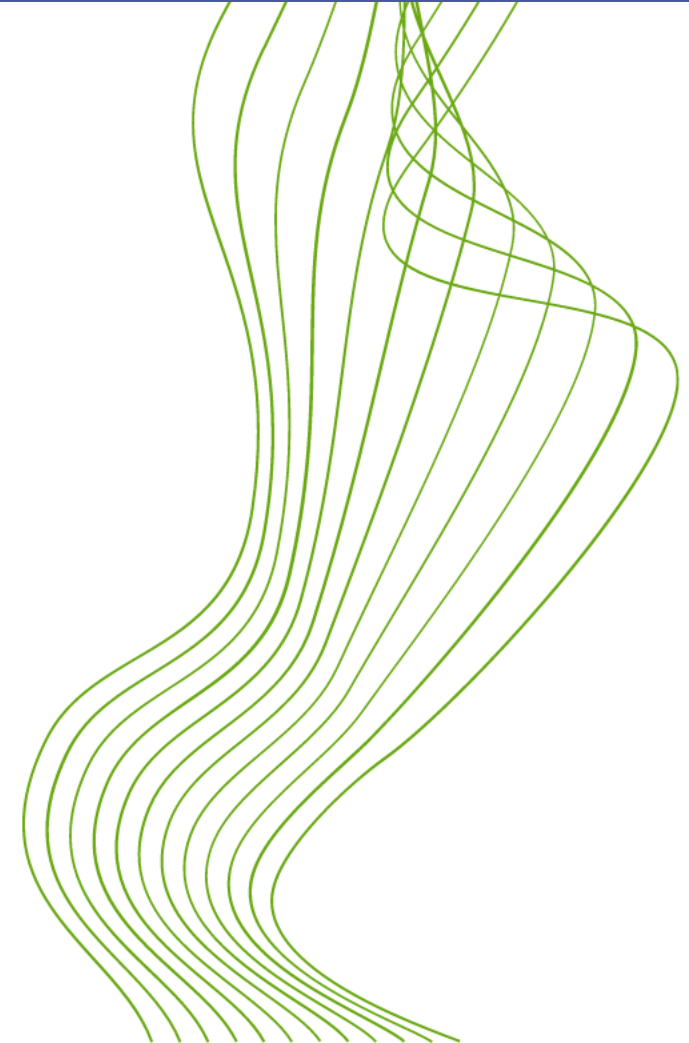




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WORKSHOP:
ENERGY EFFICIENCY IN GERMANY
– ambitions and best practice

WELCOME





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EXPORT DAY 2023

WORKSHOP:

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– ambitions and best practice

Programme

New German EE legislation and how Danish inspiration and collaboration play out at federal and state level

- **Christian Bjerrum**, Energy Advisor, Danish Embassy in Berlin
- **Anne Svendsen**, Special Consultant, Danish Energy Agency

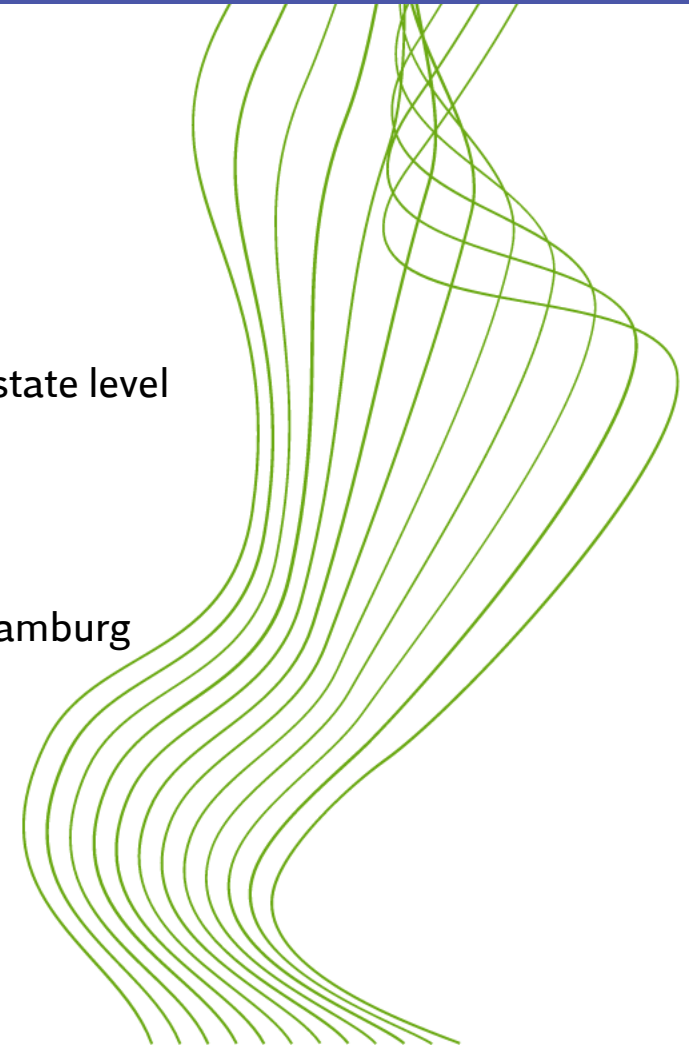
New EE export opportunities in German food and drinks industry

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Moderator: **Hans Peter Slente**, Senior Advisor, DI Energy





GREEN ENERGY
EXPORT DAY 2023

WORKSHOP:

ENERGY EFFICIENCY IN GERMANY

– ambitions and best practice

Programme

New German EE legislation and how Danish inspiration and collaboration play out at federal and state level

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**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**

Energiewende in Germany Focus Energy Efficiency

**Danish Embassy in Berlin and
the Danish Energy Agency**

21.08 2023

Building Energy ACT

Aim:

- Originally: from 2024 all new heating shall be 65% renewable (basically a ban on new oil and gas boilers)
- This triggered a very heated discussion about:
 - Renewable readiness of buildings
 - Technology-openness vs efficiency advantages
 - H2!H2!H2!
 - The government over-burdening its people

A deal was made:

- 65% criterion will only matter in areas with a heat plan
- H2-ready heating allowed if roadmap for future h2 supply
- Mandatory expert consultation when installing new fossil heating

Open points:

- How will funding look like (e.g. up to 70% for heat pumps)?
- How will heat planning law look like?



Energy Efficiency ACT

Aim:

- Binding energy savings targets
 - Final energy demand: 2030: 26.5%; 2045: 45% (compared to 2008)
 - Only 6% reduction between 2008 and 2020
 - Primary energy demand: 2030: 39,3% , no target beyond 2030

Measures:

- Federal States need to save 3 TWh/ year
- Requirements for surplus heat utilization of data centres (above 300 kW)

Open Points:

- Both Building Energy Act and Energy Efficiency Act postponed until after summer break



Climate and Transformation fund (KTF)

- 211.8 billion between 2024 - 2027 on climate and energy measures (58 bn € in 2024)

Highlights of the 2024 plan:

- 18.8 bn € for energy-efficient buildings (7bn € more than 2 years ago)
- 12.6 bn € to subsidies green electricity (compensate former EEG-Umlage)
- 4.6 bn € for further development of electromobility'
- 0.8 bn € for transformation of district heating
- 3.8 bn € for the national hydrogen strategy
- Fund is financed through CO2 pricing (EU ETS and national CO2 price for transport and heating)





DÄNISCHE
BOTSCHAFT
Berlin




Danish Energy
Agency


Thanks for your
attention!



Christian Bjerrum Jørgensen
Botschafter Energie
Direct: +49 30 5050 2103
E-mail: chrjor@um.dk



Cooperation between the
Danish Energy Agency
Denmark and Germany on
energy efficiency
Anne Svendsen



DANISH ENERGY AGENCY COOPERATION WITH GERMANY



MoU between German Ministry of Climate and Energy and Danish Energy Agency, 2023 on:

- District heating
- Energy efficiency in buildings
- Energy efficiency in industry



DRIVERS IN GERMANY



- From gas to electricity
- New Building code (Gebäudeenergiegesetz, GEG 2023)
- New energy law (Energiesgesetz)
- (The Paris Agreement)

THE BUILDING SECTOR IN GERMANY



21

million
buildings in
Germany

35%

Of total energy
consumption is
used in
buildings

2045

Net Zero
Emission in all
sectors in
Germany



WHAT DO WE DO:



- Exchange of knowledge on technologies, regulation and funding schemes (the voluntary agreement for industry, industry pool, building pool, building codes).
- Workshop, meetings, webinars
- Input to hearings on new regulation
- Study tours



WHO DO WE WORK WITH



Federal level: BMWI

DENA

DENEFF

NordRheinWestfalen, Energy4Climate

HessenLEA,

Baden-Württemberg, Ministry of C



KNOWLEDGE DEMAND AND POTENTIAL - BUILDINGS

Policy level:

Decarbonization
of the heating
sector

Input on building
code: energy
performance and
embedded
carbon

Energy
Performance
Certificates

Grants for energy
efficient renovation
of existing buildings

Conversion
from gas to
heat pumps

Potentials:

Public buildings,
Schools, renovation
and energy
management

District
energy
solutions

Larger heat pumps
and heat pumps for
houses and homes



KNOWLEDGE DEMAND AND POTENTIAL - INDUSTRY

Policy level:

Industrial decarbonization and EE

Electrification of industry – food processing, cement, oil refineries and chemical.

Decarbonization potential by using green gases including hydrogen and CCS(U)

cost-effective support schemes and incentive programs; measurable effects and additional obligations tied to receiving grants

Potential for demand response and peak load management (load shifting).

Potential:

Waste heat recovery, high temperature heat pumps, low global warming potential (GWP) refrigerants

Water conservation technologies and approaches

Energy management systems: energy optimization for production processes, operational KPI's, automation and meters



DÄNISCHE
BOTSCHAFT
Berlin



Danish Energy
Agency

Thanks for your
attention!



Anne Svendsen
Danish Energy Agency
ansv@ens.dk



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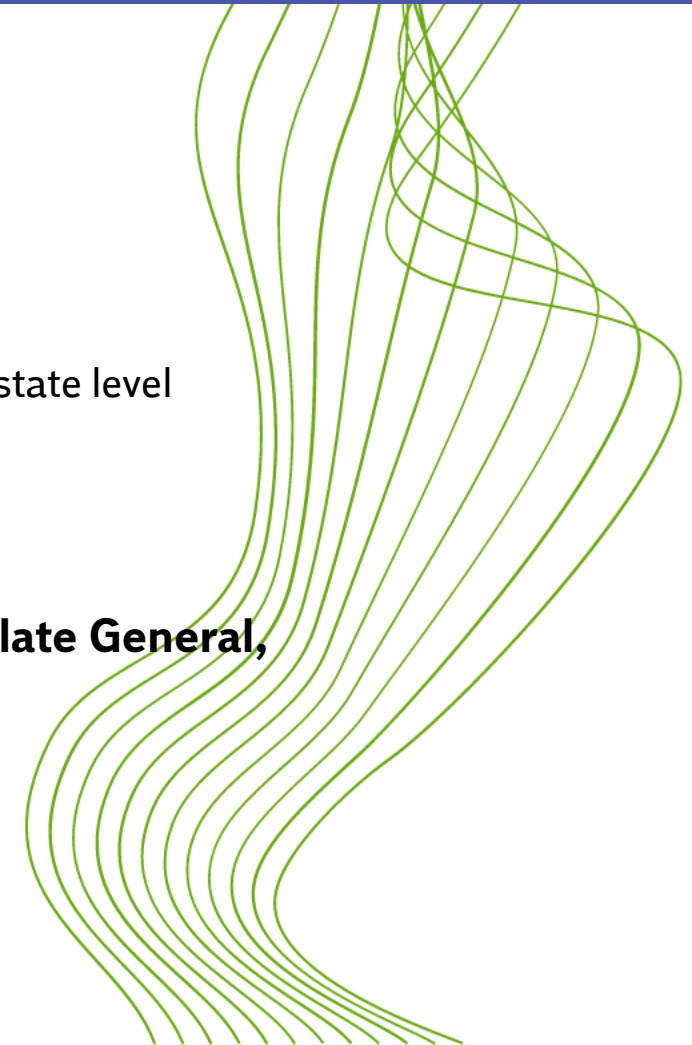
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**MINISTRY OF FOREIGN AFFAIRS
OF DENMARK**
The Trade Council



**SUSTAINABLE
INDUSTRIES
ADVISORY**

Sustainable Industries Advisory

Danish initiative for a more sustainable food industry

Website: www.tc-sia.de

State of Green
Join the Future. Think Denmark



Danish Energy
Agency

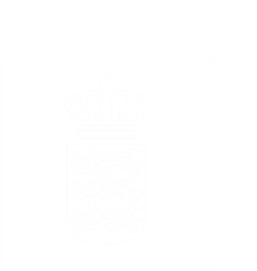




Agenda



1. German Food production
2. Example: German breweries
3. Why the Danish food industry?
4. The sustainable industries advisory
5. Energy audits



German food production

- The turnover of the German food industry was approx. 219 billion euros in 2022 making Germany one of the leading industries in Europe
 - Largest sub segments: meat, dairy, and baked goods

One of the most energy intensive industries with almost 15 million tons of CO2 emissions every year

2022: Consequences of the Ukraine war - Food industry needs security of supply for raw materials and energy

Climate goal in Germany: By 2030, emissions are to be reduced by 65 percent compared with 1990



**Strong needs
for energy
efficient
solutions**

Opportunities for Danish companies

Example: German Brewing Industry

- Number of breweries 1,512 (~150 large breweries and ~170 mid-sized breweries)
- **Potential for energy savings up to 25% in the German beverage industry**
 - Place a high priority on the use of renewable energy
 - Potential for complete decarbonization
 - Great interest in the use of biogas, water reuse, heat pumps, photovoltaic systems and **new innovative technologies**



Why the Danish food industry?



- Strong experiences and stories from the food industry
- Energy efficient solutions developed through heavy research
- The companies in the SIA alliance are examples of strong competencies within energy optimization and provide products to the big 3:

Arla Foods
Carlsberg
Danish Crown

And other Danish food producers ...

Sustainable Industries Advisory



The Danish partners provide :

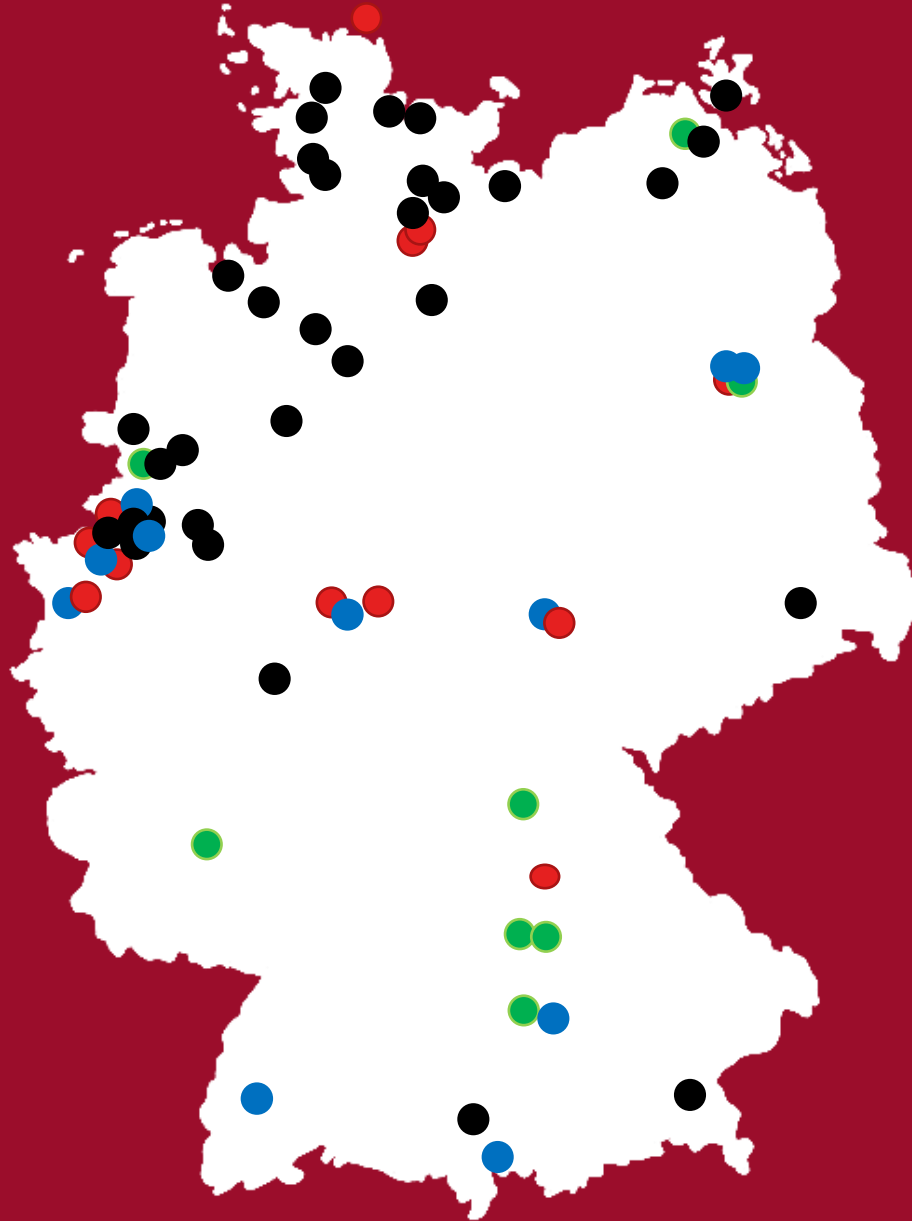
- ✓ Energy efficiency
- ✓ Water efficiency
- ✓ Cooling and heating
- ✓ Innovation
- ✓ Digitalization and automation
- ✓ Measurement / data utilization



How do we work in sia?

- Cold canvas
- Workshops with german companies
- Joint events
- In contact with German stakeholders & agencies
 - LBM, ZNU, BNW, FPI, Foodactive Hamburg, Energy4Climate, Langesenergie Agentur Hessen...
- Conferences and fairs to increase our network
 - Berliner Milchforum, PIUS, Brau- und Maschinentechnische Arbeitstagung Stralsund, Brau Beviale ...
- EKF accelerator – energy audits and workshops





 **Events 2022 and 2023**

 **Fairs and Congresses**

 **Customer visits**

 **Partners**



SUSTAINABLE
INDUSTRIES
ADVISORY



HOLISTISCHER ENERGIEAUDIT BEI EINEM DEUTSCHEN FISCHPRODUZENTEN IN 2021



FISCHPRODUZENT, DEUTSCHLAND

PRODUKTION

LACHS- UND
FORELLEVERARBEITUNG

INITIATIVE
HOLISTISCHER ENERGIEAUDIT EINES ISO-50001
CERTIFIZIERTES UNTERNEHMENS

ERGEBNIS
EINSPARUNG VON 4.480 MWH JÄHRLICH

KONTAKT

TEAMLEITER: JAN LARSEN
TELEFON: 40 41 40 05 29
JANLAR@UM.DK
WWW.TC-SIA.DE

ERGEBNIS

4.480 MWH JÄHRLICHE ENERGIEEINSPARUNG
40% REDUZIERUNG DES GESAMTEN ENERGIE BEDARFS
KEIN ERDGAS MEHR

WAS HAT ES GEKOSTET?

€540.000 OHNE FÖRDERMITTEL
AMORISATIONZEIT 2,14 JAHRE

WARUM WURDE DAS PROJEKT DURCHGE- FÜHRT?

DER DÄNISCHE STAAT HATTE FÖRDERMITTEL ZU VERFÜGUNG
GESTELLT, UM DAS ENERGIEEINSPARPOTENTIAL IN DER DEUTSCHEN
FISCHPRODUKTION FESTZUSTELLEN.

WELCHE MAßNAHMEN WURDEN BEWERTET?

9 VERSCHIEDENEN MAßNAHMEN DURCHFÜHRT INNERHALB DEN
GEBIETEN: KÜHLUNG, DIGITALISIERUNG, WASSERMANAGEMENT.

ERGEBNIS

4.480 MWH JÄHRLICHE
ENERGIEEINSPARUNG

7.547 M³ WASSER
EINGESPART

€ 540.000 INVESTMENT

2,14 JAHRE
AMORISATIONZEIT

Energy audit example 2022

Supported by eifo green accelerator

Energy Audits 2022

	Research Topics	Cost savings	capital Expenditure	CO2 Reductions	Pay back Period
Fish Producer Production: Salmon and Trout Processing	Possible heat recovery from cooling, reduction of gas consumption, conversion of heat pump, and other possible initiatives	4,500 MWh yearly An annual cost saving of 265,000 Euros	540,000 Euros	1,142 tons CO2 yearly reduced	2,14 years
Dairy Factory Production: Cheese	Air consumption, recycling of cooling/heating for hot water, optimization of water flushing, and steam optimization	5,265 MWh yearly An annual cost saving of 252,000 Euros	440,000 Euros	792 tons CO2 yearly reduced	1,7 years
Milk Powder Manufacturer Production: Milk Powder	Optimization of energy consumption for RO-water, heat reuse from process extraction, extraction of heat in the residual water, and other possible initiatives	12,544 MWh yearly An annual cost saving of 960,000 Euros.	1,860,000 Euros	1,900 tons Co2 yearly reduced	2 years
Emzyme Manufacturer Production: Enzyme	Heat recovery from the cooling system, utilisation of cold in the granulate return, optimisation of air conditioning, and other possible initiatives	2,224 MWh yearly An annual cost saving of 334,000 Euros	1,650,000 Euros	1,420 tons CO2 yearly reduced	3 years
Water company Production: Mineral water	Reuse of process heat for space heating, water reuse, heat from compressed air generation and other possible initiatives	3,445 MWh yearly An annual cost saving of 649,000 Euros	2,672,000 Euros	1,281 tons CO2 yearly reduced	2,14 years
		Total annual cost savings: <u>2.5 million euros</u>	Total capital expenditure: <u>7,16 million euros</u>	Total CO2 savings: <u>6,535 tons yearly</u>	Average pay back period: <u>2,2 years</u>

Thank you for your attention

Contact:

Jan Larsen

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www.tc-sia.de

State of Green
Join the Future. Think Denmark



Danish Energy
Agency





GREEN ENERGY
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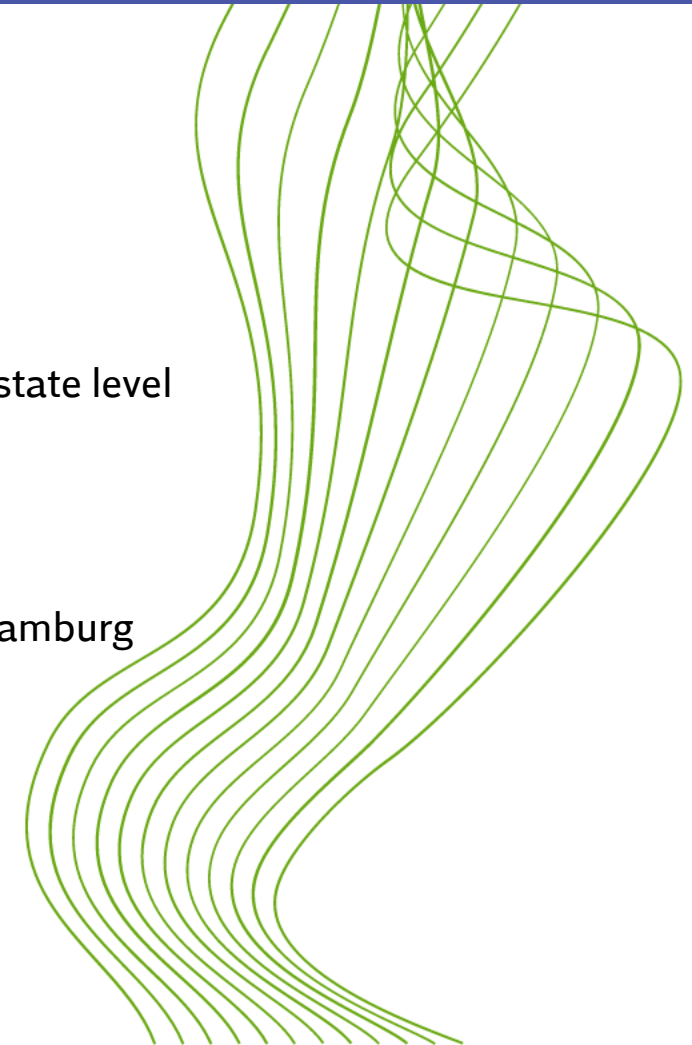
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The background of the slide is a photograph of an industrial facility, possibly a refinery or chemical plant, with various towers, pipes, and scaffolding. The image is overlaid with a semi-transparent teal color. In the top left corner, the logo for NGS Nordic Green Solutions is displayed in white. The logo consists of the letters 'NGS' in a large, bold, sans-serif font, followed by the words 'Nordic Green Solutions' in a smaller, stacked, sans-serif font.

NGS Nordic
Green
Solutions

Experience Working with Energy Efficiency in Germany

Home of
Green Business



Johnny H. G. Ryser
1971

Personal Ambition:

I climate neutral industry before I retire
(I am 68 in 2039)

Climate Activist since 1988

Climate Capitalist since 2020

A stack of rolled-up newspapers, likely from the mid-20th century, is shown in a dark teal color. The text on the newspapers is partially legible, including phrases like "dente, era nell'ordine (...)", "mento non sono il gesto di Bara-", "Ma ci sarà quello che trascinerà", "dica e l'amico, ossia il pane, la", "zione di coraggio e civiltà", and "Raffa e Fontana".

NGS' history

A photograph of an industrial facility, possibly a refinery or chemical plant, at dusk. The sky is a deep blue, and the facility's lights are glowing. Several tall distillation columns and storage tanks are visible. The foreground shows a grassy field.

What we do....

Customers primary within

Food and Ingredients

Retail

Manufacturing

Strategic partner on Energy and ESG/LCA

ESG and/or Energy baseline

Project development and execution


Experts in industrial processes,
and energy transformation processes

Project financing

System flexibility

An aerial photograph of a historic German town, featuring numerous half-timbered houses with steep gabled roofs and traditional architecture. The image is overlaid with a semi-transparent green filter. The text "Our German history" is centered in a bright yellow-green font.

Our German history



“Germany is in an identity crisis. The success of the German economical success has relied on three key factors”

1 *Cheap Russian energy*

2 *Export to China*

3 *USA paying for the security*

This formular doesn't work anymore, and then what?

Energy mapping

Huge Energy Efficiency opportunities in Germany

Among the first five Energy Mappings we found EE Potential on 25-59% reductions with less than 3 years pay back time

Very slow decision processes

Almost everything can entitle for subsidies in Germany

Energy crisis in Germany



Supply Security



Competitiveness



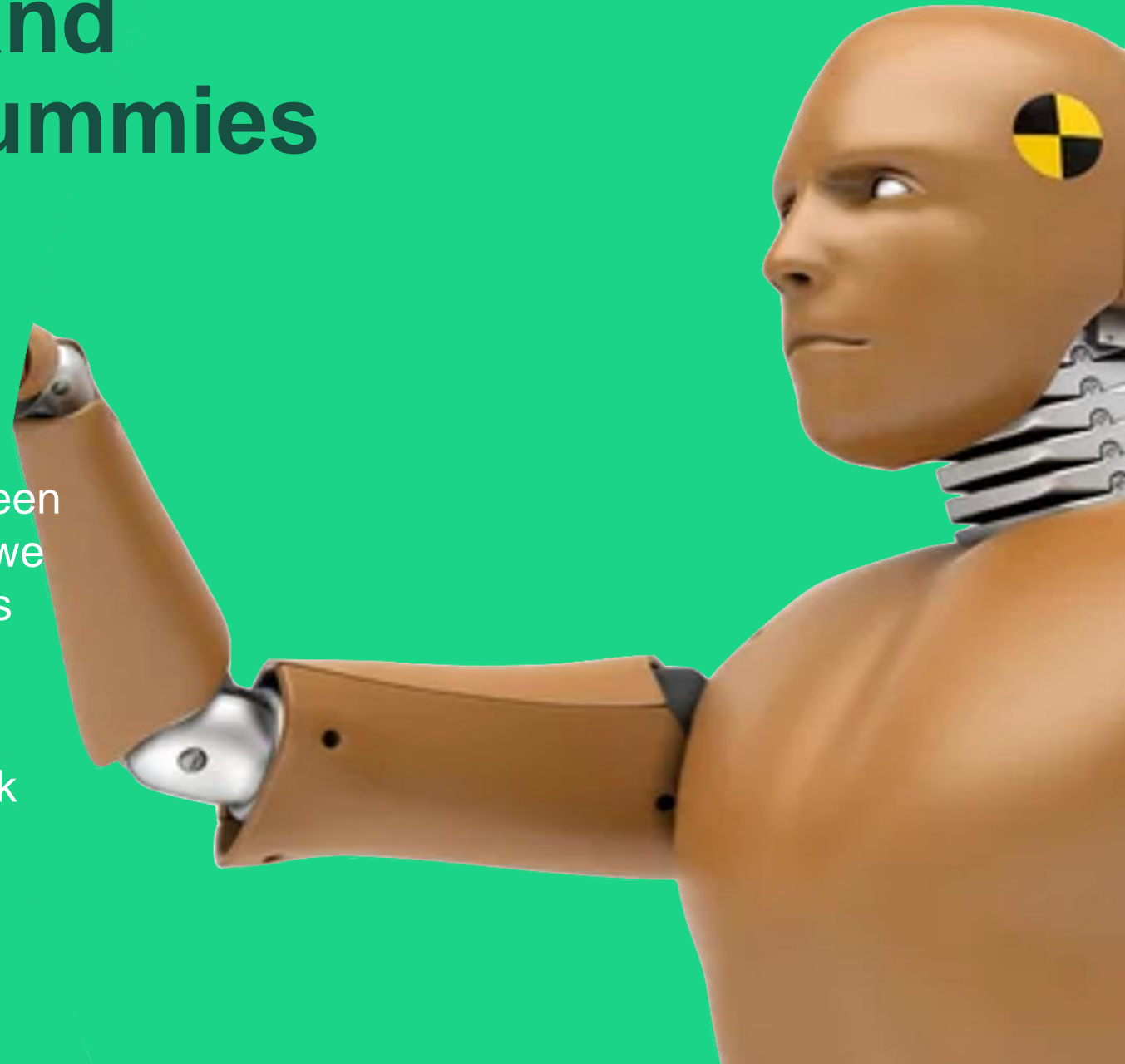
Predictability

Macro economy and Geopolitics for Dummies

→ The green transition is a race between three continents

→ We source raw materials for both the green transition and so much else from areas we probably don't really want to do business with

→ OPEC has chosen to become world bank and keep oil price high



A photograph of an industrial facility, possibly a refinery or chemical plant, with various towers, pipes, and scaffolding. The image is overlaid with a semi-transparent teal color.

NGS Nordic
Green
Solutions

What is your contribution?

Home of
Green Business



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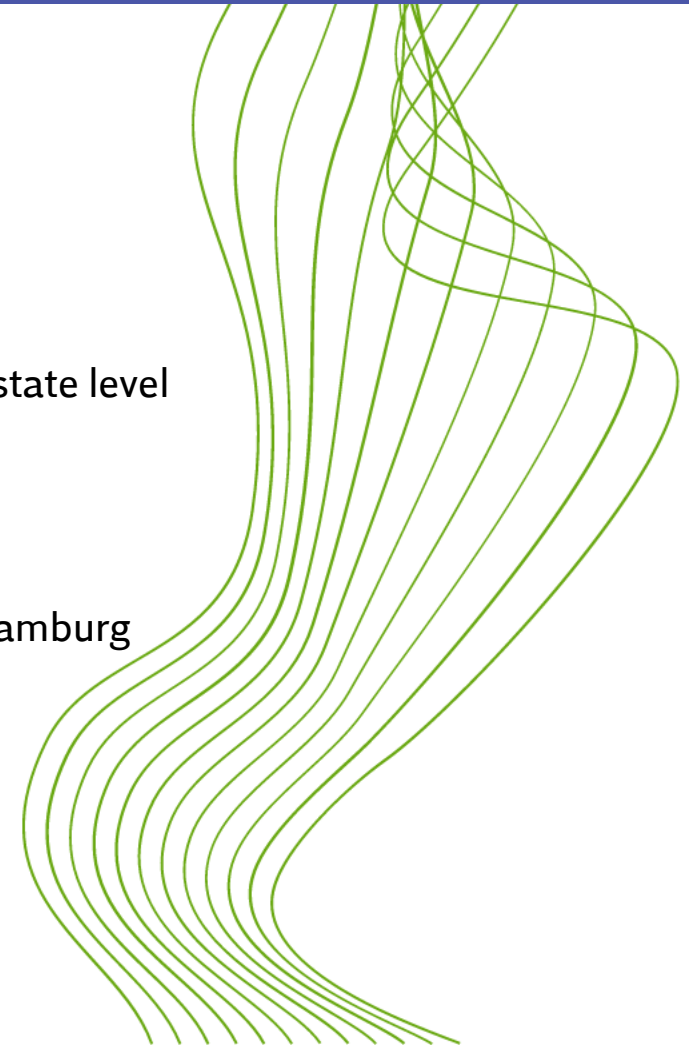
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Herzlich Willkommen!

Welcome



Resource and Efficiency Advisor UNIDO



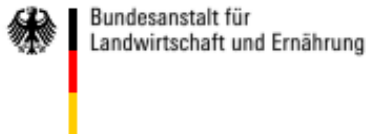
DNK Supporter



**Registered expert advisors for the BAFA refrigeration subsidy
Registered experts for energy audits
Registered advisors for energy efficiency consultations**



Executive Board energieland 2050 e. V. Energy self-sufficient district of Steinfurt



**Experts for agricultural energy advice
Experts in the programme to promote investments in emission-reducing measures in the fermentation of farm manure**



Listed as energy efficiency expert for federal funding programmes

Certified Trainer for the EU Programme; Towards a sustainable Agro-Food Industry. Capacity Building Programme in Energy Efficiency



Excerpt Memberships & Associations



**Member of the DLG,
Chairman Novelty Commission (awarding of
the gold and silver medals)
Member Working Group Climate and
Agriculture**



Member of the Hydrogen Initiative for SMEs



Appointed Member Commission Innovation and Promotion BVMW



Hochschule Osnabrück
University of Applied Sciences

Guest Lecturer Department of Agriculture / Energy



**Project with the Sustainability Department of
the Danish Government.**

The Earth by Night ?

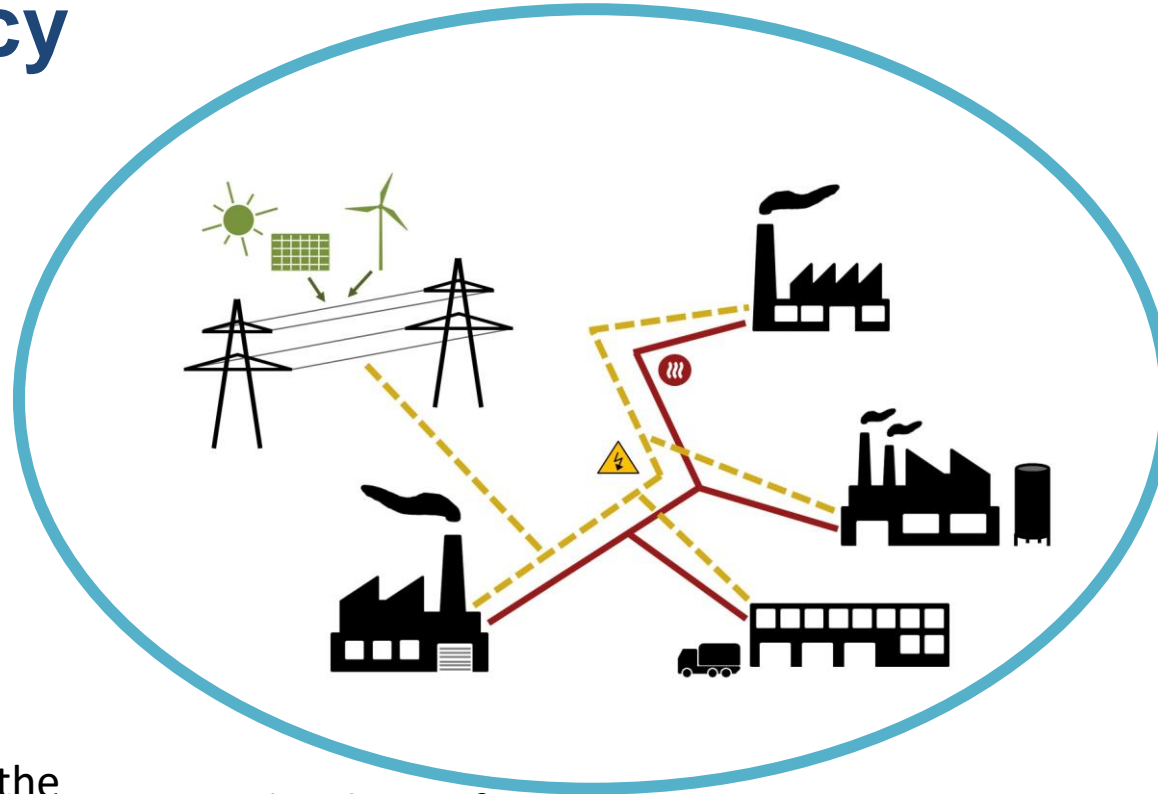


Figure 1: Satellite images of the Earth at night

Source: welt.de (<https://www.welt.de/vermischtes/weltgeschehen/article111849893/So-jaesst-der-Mensch-die-Erde-bei-Nacht-leuchten.html#cs-Nasa-Erde-bei-Nacht-2.jpg>)

Primary source: dapd news agency, NASA

Energy concept - Thinking self-sufficiency - energy efficiency



about **36%** of the
energy
consumption of all
buildings in
Germany is
accounted for by
non-residential
buildings.

The share of
industry,
commerce, trade,
and services in
Germany's energy
consumption is
44%.

Companies can
save up to **30%**
of their self-
consumed energy
through typical
energy efficiency
measures.

The energy cost
has seen a **200%**
increase over the
past 15 years

Municipal heat management planning in Germany



Projekt: Regionales Kompetenzzentrum energieautarker Stadtumbau. Dieses Projekt wird aus Mitteln der Europäischen Union gefördert.



EUROPAISCHE UNION
Investition in unsere Zukunft
Europäischer Fonds
für regionale Entwicklung

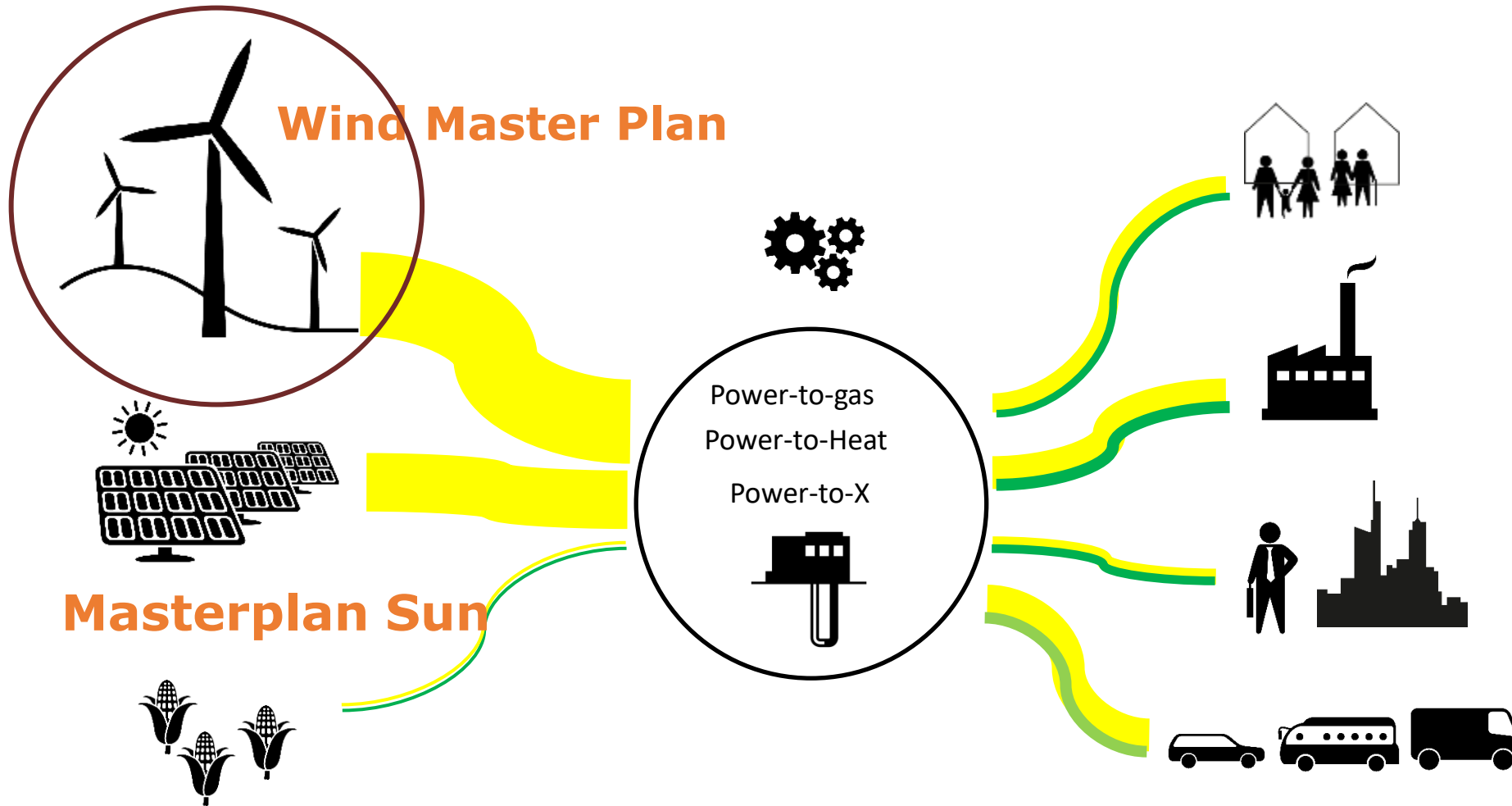


EFRE.NRW
Investitionen in Wachstum
und Beschäftigung

Ministerium für Wirtschaft, Energie,
Industrie, Mittelstand und Handwerk
des Landes Nordrhein-Westfalen



Master Plan 100 % Climate Protection - our way is calculated - the energy transition is electric !



Building Energy Act Germany GEG



Heating Act and Energy Efficiency Act

Funding opportunities Germany

- Energy consulting (in SMEs) Non-residential buildings
- Cross-sectional technologies: optimisation of technical systems/individual measures
- BAFA Modules 1 to 5
- Cold conveying
- Heat networks
- Federal and state funding programmes
- etc.



Der Eine wartet, dass die Zeit sich wandelt, der Andere packt sie an und handelt!*

Vielen Dank für Ihre Aufmerksamkeit

Dipl.-Ing. Tobias Peselmann

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Wadelheimer Chaussee 111

48432 Rheine

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Lise-Meitner Straße 2, 49076 Osnabrück

T.: 0541/9412700

M.: 0172/5216693

peselmann@pbr-netzenergie.de



WORKSHOP:

ENERGY EFFICIENCY IN GERMANY

– ambitions and best practice

Dialogue: How to pursue the business opportunities within EE in Germany?

Panel

- **Christian Bjerrum**, Energy Advisor, Danish Embassy in Berlin
- **Anne Svendsen**, Special Consultant, Danish Energy Agency
- **Jan Larsen**, Sector Expert, Sustainable Industries Advisory Team, Danish Consulate General, Hamburg
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THANK YOU !

