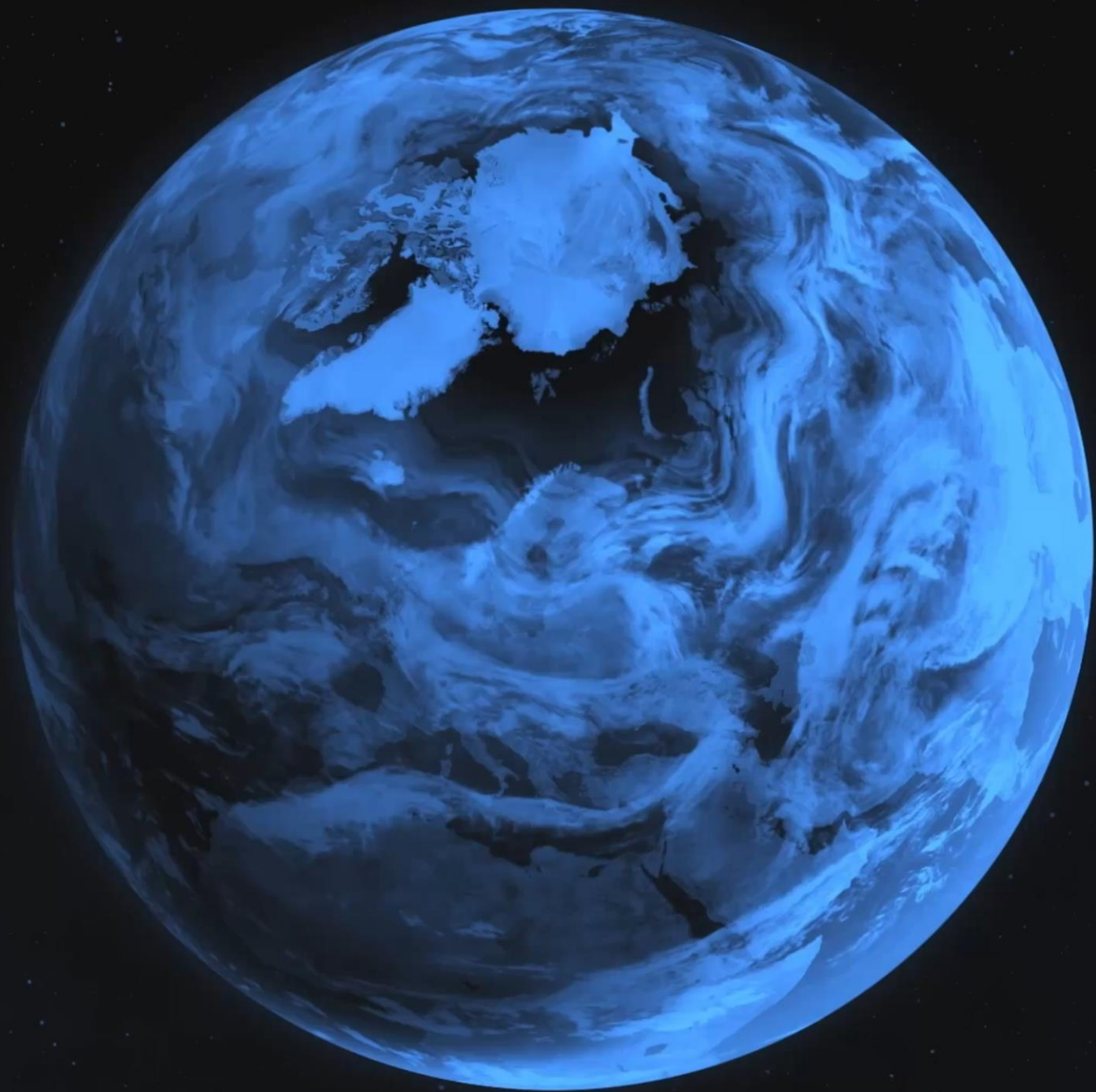


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# European Energy Framework and business opportunities to Finland

By: **BF, TEM and VTT**

19.3.2025

2025 MARCH 17-20  
VAASA, FINLAND



# Opening and welcome



**Timo Rittonummi**

**Deputy Director General  
Ministry of Economic Affairs and  
Employment Finland**



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# Opening and welcome

**Timo Ritonummi**

**Deputy Director General**

**Ministry of Economic Affairs and Employment  
Finland**



Ministry of Economic Affairs  
and Employment of Finland

## The scene – simultaneously permanent and changing



- SET Plan – European Strategic Energy Technology Plan
- Investment funds for clean energy – EU Innovation Fund, Horizon Europe etc.
- **New Commission, new attitude: simplification!**

# SET Plan, revision, but also old



- **SET Plan**, The European Strategic Energy Technology Plan, 2007-
- Has been revised 2015-, then Implementation Working Groups, IWGs
- Now **14 IWGs**: Industry, Batteries, Energy Systems, RESs etc.
- Now **updating** is taking place, but the IWGs go on
- **CETP**, Clean Energy Technology Platforms in bigger role
- No extra funding, no directives, but co-operation!



# EU funding, Innovation Fund



- Innovation Fund, since 2020, earlier NER-300, getting better by each year, improvements and enlargements
- Year-clock: the calls open at October-November, Hydrogen Bank closes in February (now 20.2.), others April (now 24.4.), results Bank April, others in October, 4-6 billion euros/a
- Different categories: small, medium, large, pilots, special quota for maritime; has expanded to industry (“bananas and oranges..”)
- CINEA is organizing webinars, workshops, Q&A-page etc.
- Projects are rated by points (by CINEA) – support letters are ~ 0

# Horizon Europe



- Key funding program for Research and Innovation, 2021-2027 EUR 95,5 billion (estimate), on lower TRL levels
- Large, 5 mission areas (cancer, food etc. energy tech. is only part)
- Partnerships (49 candidates) in Clusters, Cluster 5: Climate, Energy and Mobility
- MEE (TEM in Finnish) is coordinating, Business Finland key player
- Business Finland, Customer Service (Horizon Europe, Innovation Fund, other EU funding, national funding)

## New Commission



- The new Commission is starting very positively, but the deeds speak – when and if they come - simplification
- The old Commission gave a tsunami of Directive proposals and Acts (EED, EPBD, REDs etc. RFNBO-Act, Low Carbon Hydr. Missing) – it takes time to implement
- Big hopes for the new Commission, “100 bill. Euros for clean industrial prod.” Industrial Decarbonisation Bank
- Maritime- and aviation sectors are now on focus – and INDUSTRY
- Hydrogen and energy storage questions are now “burning” ones



**Kiitos / Thank You!**



# Net Zero Industry act



**Jyrki Alkio**

**Head of Industrial Policy Unit  
Ministry of Economic Affairs and  
Employment Finland**



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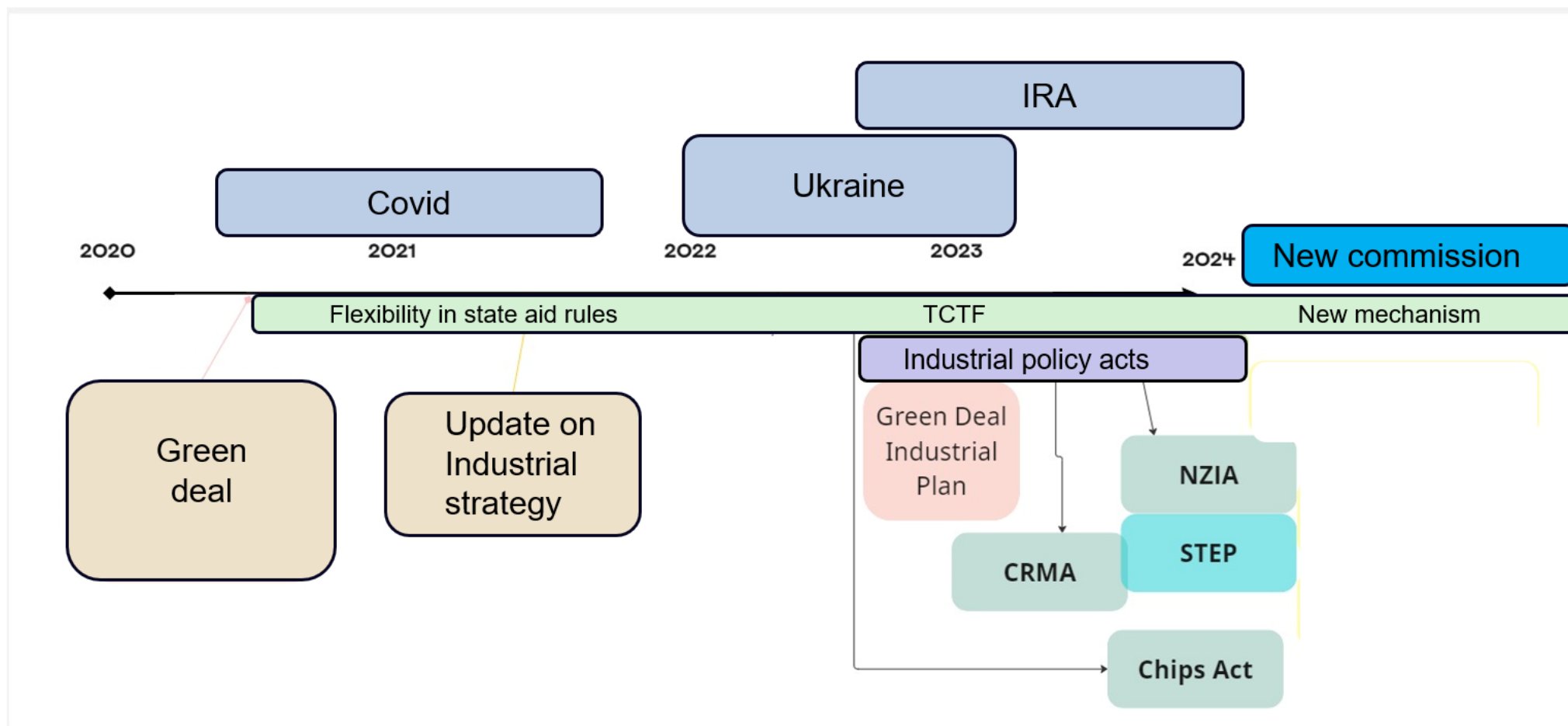
# Net Zero Industry act

Jyrki Alkio, 19.3.2025 Energy Week



Ministry of Economic Affairs  
and Employment of Finland

# EU industrial policy 2020-2025



# NZIA – why

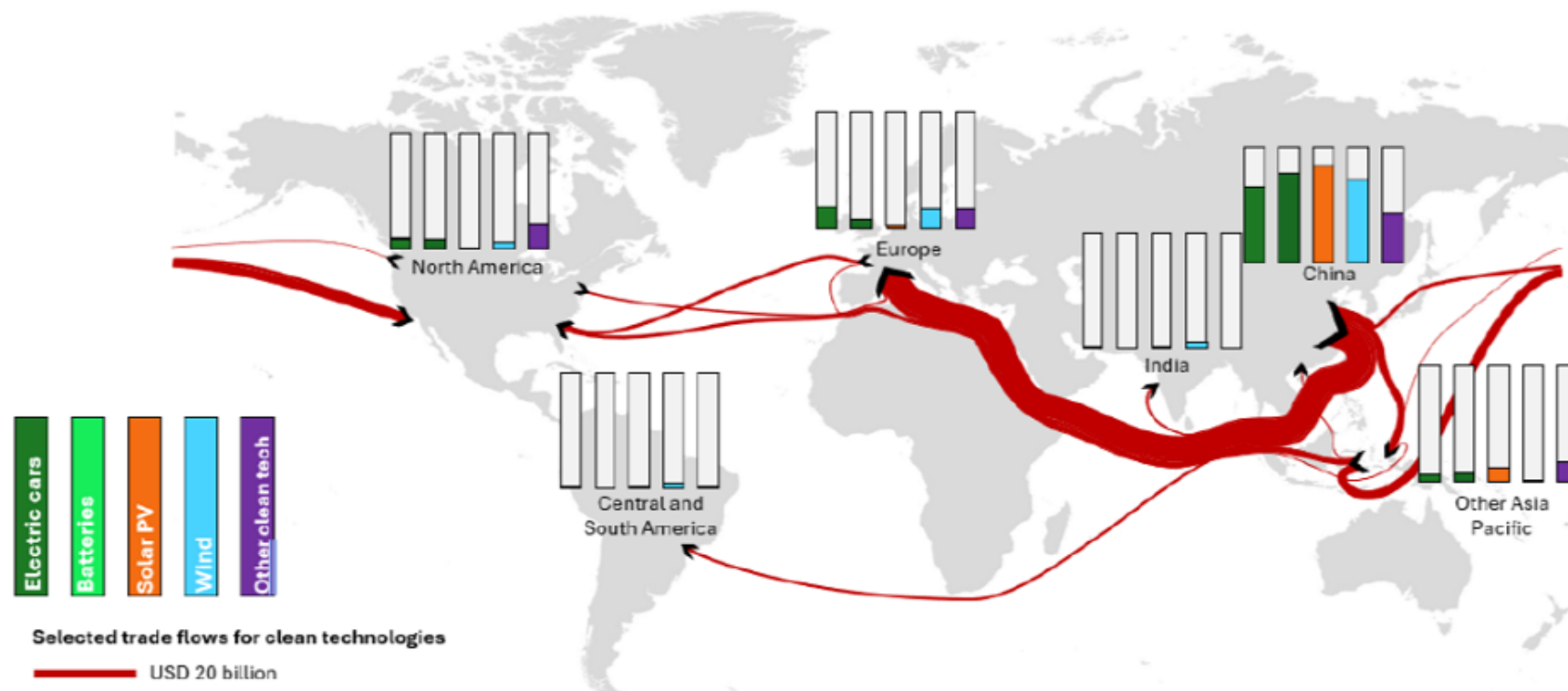


- Initiative 13.3.2023. Act into force 29.6.2024
- Driving forces behind the initiative:
  - **Green Deal:** need to build net zero industries in EU and to improve EU's resilience on these technologies
  - **To support the single market:** need to avoid uncoordinated action from 27 member states in the field of net zero technologies
  - **Global competition:** Reaction especially to IRA
- Ambitious targets: to build capacity to meet at least 40% of the EU's annual deployment needs by 2030. The goal is to increase the competitiveness of the net-zero technology sector, attract investments, and improve market access for clean tech in the EU.



# Our strategic dependency remains in place

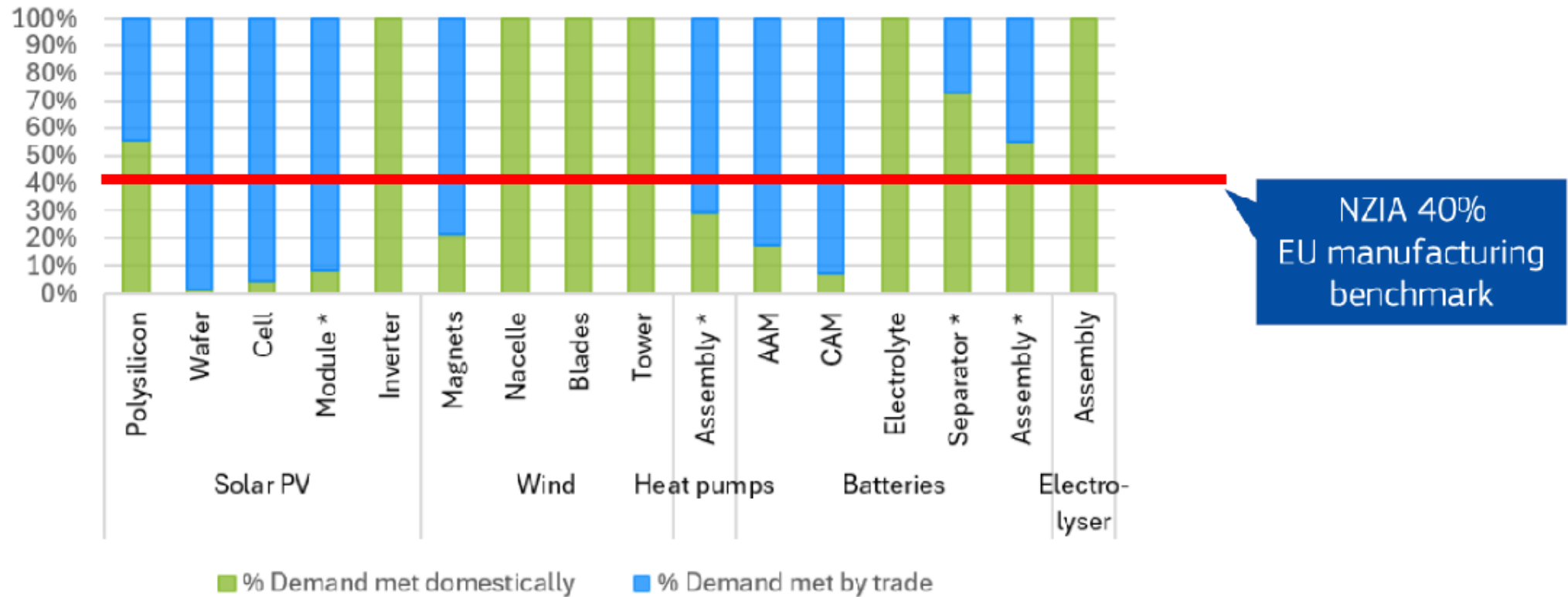
Share of global net-zero technology manufacturing output by technology, 2023



Source: IEA, 2024

**China accounts for more than 70% of all global net-zero technology manufacturing.**

# EU autonomy in net-zero technology production



# List of technologies



- The NZIA encompasses final products, components, and machinery necessary for manufacturing net-zero technologies
- Politically the most important technology in the list is nuclear (strong support from France, Germany opposing)
- Strategic projects may get priority status like shorter permitting time frames.

# List of technologies

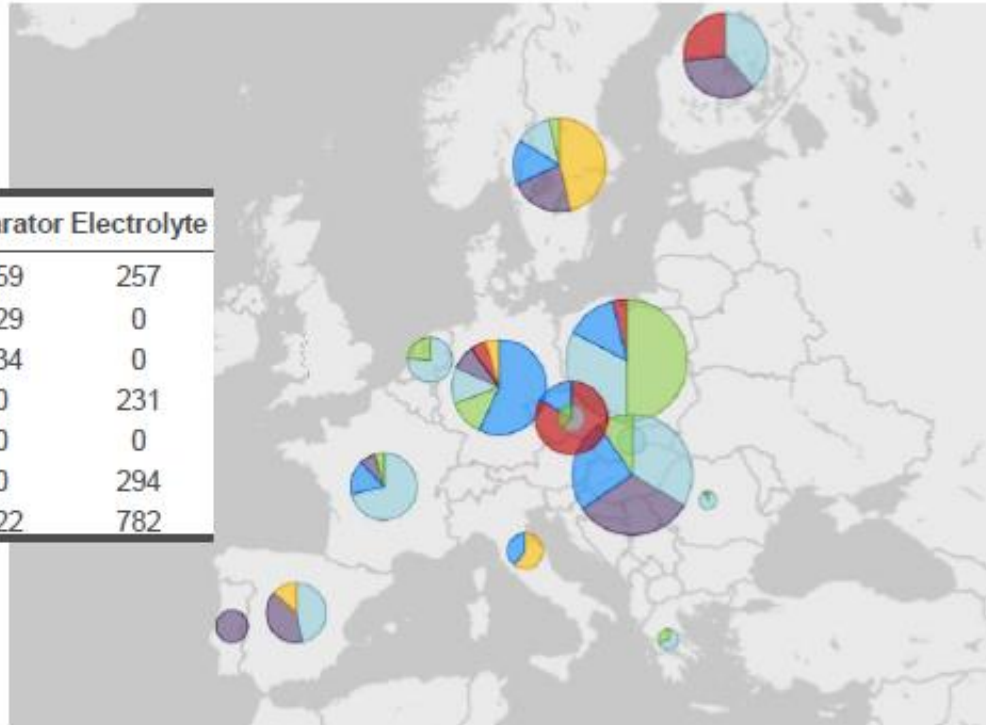


- Solar photovoltaic and solar thermal technologies
- Onshore and offshore renewable technologies
- Battery/storage technologies
- Heat pumps and geothermal energy technologies
- Hydrogen technologies, including electrolyzers and fuel cells
- Sustainable biogas/biomethane technologies
- Carbon capture and storage (CCS) technologies
- Grid technologies
- Nuclear fission energy technologies, including nuclear fuel cycle technologies
- Sustainable alternative fuels technologies
- Hydropower technologies
- Other renewable energy technologies
- Energy system-related energy efficiency technologies, including heat grid technologies
- Renewable fuels of non-biological origin technologies
- Biotech climate and energy solutions
- Other transformative industrial technologies for decarbonisation
- CO<sub>2</sub> transport and utilisation technologies
- Wind propulsion and electric propulsion technologies for transport
- Other nuclear technologies



# Batteries project pipeline (2025)

	Cell	CAM	AAM	Separator	Electrolyte
Operational	202	88	31	159	257
On Track	536	216	272	329	0
Delayed	111	203	123	334	0
Unclear	307	355	22	0	231
Paused	110	257	0	0	0
Cancelled	30	122	0	0	294
Total	1297	1240	448	822	782



## Status

- Cancelled
- Delayed
- On Track
- Operational
- Paused
- Unclear

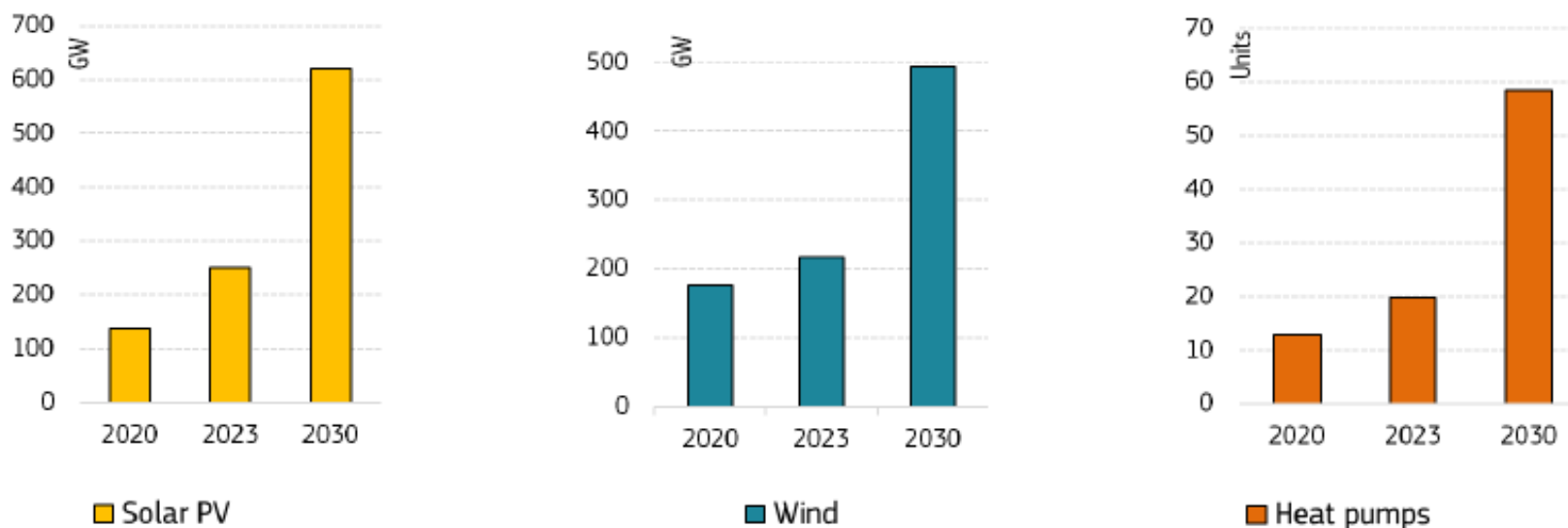
**EU manufacturing capacity projected to grow significantly by 2030,  
but numerous cancelled/delayed projects require attention!**



# Deployment of net-zero technologies



*Historical deployment of installed capacity and required future installed capacity in the EU, 2020-30*



Sources: EUROSTAT, PRIMES

**The European Union is a front runner in the deployment of net-zero technologies, but uptake is progressing at different pace across technologies**



# NZIA – how



- Streamlining permitting
  - Time frames for permitting processes
- Access to market
  - Public procurement
  - Auction on renewables
- Markets for CO<sub>2</sub> injection
  - target of 50 million tonnes of annual CO<sub>2</sub> injection capacity by 2030
  - oil and gas production licensees must invest and use their assets, skills and knowledge
- Net zero alleys (industrial parks)
- Enhancing skills
  - Net zero academies

# Investment sources to unlock via this Platform

MS	EUR mln	Solar	Wind	Batteries	Electrolysers/H <sub>2</sub>	Heat pumps	CCUS
AT	355	x	x	x	x	x	x
BE	413			x	x		
CZ	30			x			
DE	11161	x	x	x	x	x	x
DK	368		x		x		
EE	65				x		
EL	827			x	x		
ES	3597	x	x	x	x	x	x
FI	445			x	x		
FR	7092	x	x	x	x	x	
HR	125			x			
HU	2360	x	x	x	x	x	x
IT	5112	x	x	x	x	x	x
LU	20	x	x	x	x	x	x
NL	1794	x		x	x		
PL	2153	x	x	x	x	x	x
PT	1962	x	x	x	x	x	x
SE	1103			x	x		
SK	1613	x	x	x	x	x	x

**TCTF  
and IPCEIs  
€ 41 bn**

**€45 billion** by EIB  
to support Green  
Deal Industrial  
Plan, to mobilize  
over **€150 billion**  
investment by  
2027

**STEP –  
Cohesion  
policy re-  
programming  
€ ?? bn**

**MS  
encouraged to  
spend 25% of  
ETS revenues  
on NZIA  
projects**

**RRF &  
RepowerEU  
€ 3 bn**

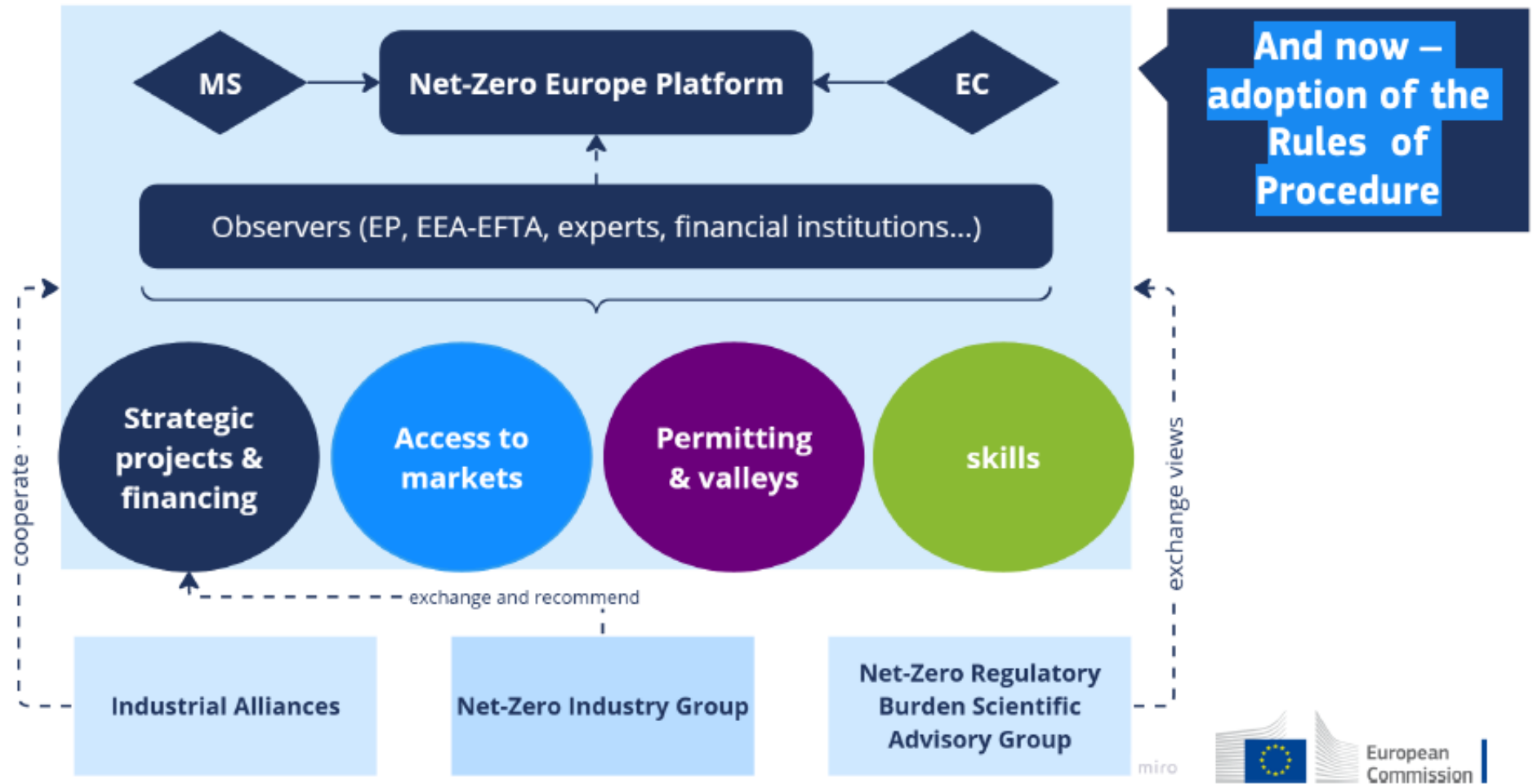
**EU funding by  
2027  
(InvestEU,  
Innovation  
Fund, excl. H2  
bank) € 5 bn**

**The EU must act urgently to reduce dependencies and scale up net-zero manufacturing by implementing NZIA non-price criteria, faster permitting, and investment support.**





### 3. Net-Zero Europe Platform



# Strategic projects



- Faster permitting
  - Without prejudice to obligations provided for in Union law, where a project is recognised as a net-zero strategic project, Member States shall grant that net-zero strategic project the status of the highest national significance possible, where such a status exists in national law, and that net-zero strategic project shall be treated accordingly in the permit-granting processes, including those relating to environmental assessments and, where data is available, to spatial planning.
- Access for financing?
- Critical raw materials act, 170 applications in EU, 16 from Finland
- Net Zero, 10+ applications in EU so far, zero in Finland

# National implementation



- Since autumn 2024 a governmental group has prepared the national implementation. Representatives from MEAE, ME, MAF, MEC
- Challenging act – not many mandatory paragraphs but in many cases need to define new ways to act – example the co-operation between the single point of contact and the acceptance of strategic projects
- MEAE has coordinating role
- Most important new obligations are on permitting (ME)
- Public procurement (MEAE)
- Auction on renewables (MEAE + MAF)
- Skills (MEC)



# European networks – relevant to Finnish players



**Tuula Mäkinen**

**Lead of Green Electrification  
VTT**



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# European networks – relevant to Finnish players

**Tuula Mäkinen**  
Lead, Green Electrification

04/04/2025 VTT – beyond the obvious



# Networking opportunities in the SET Plan community

## European Energy Research Alliance (EERA)

- The research pillar within the SET Plan framework.
- The largest low-carbon energy research community in Europe.
- Brings together more than 250 organisations from over 30 countries.
- Pursues the mission of catalysing European energy research for a climate-neutral society by 2050.

## European Technology and Innovation Platforms (ETIPs)

- A key advisory role within the SET Plan.
- Open stakeholder groups driven by industry and research organisations.
- Promote innovation, knowledge transfer and European competitiveness in the energy sector.
- Represent and guide innovation funders and promoters by defining R&I priorities for different energy sectors.

# EERA Joint Programmes

**EERA JPs cover the entire spectrum of CET related research fields - Technology and non-technology**



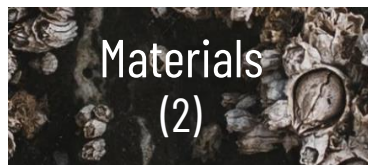
- ▶ Energy Transition for Sustainable Society
- ▶ Energy Systems Integration
- ▶ Smart Grids

- ▶ Energy Efficiency in Industry
- ▶ Smart Cities
- ▶ Energy Digitalisation



- ▶ Wind
- ▶ PV
- ▶ Hydrogen & Fuel Cells
- ▶ Energy Storage
- ▶ CC(U)S

- ▶ Hydropower
- ▶ Bioenergy
- ▶ Geothermal
- ▶ Ocean
- ▶ CSP



- ▶ Advanced Materials Energy Applications

- ▶ Nuclear Materials

# European Technology and Innovation Platforms (ETIPs)

- ETIP Wind
- ETIP PV
- Ocean Energy Europe
- ETIP Geothermal
- European Construction Technology Platform
- Smart Networks for Energy Transition
- ETIP on Renewable Heating and Cooling
- ETIP Bioenergy
- Zero Emissions Platform
- Sustainable Nuclear Energy Technology Platform
- Batteries Europe

# bey<sup>0</sup>nd

## the obvious

# FLEXIBLE ENERGY SYSTEMS PROGRAM



Jussi Åkerberg

Head of Program  
Business Finland



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# FLEXIBLE ENERGY SYSTEMS PROGRAM

Jussi Åkerberg  
Head of Program, Flexible Energy Systems  
Business Finland  
[jussi.akerberg@businessfinland.fi](mailto:jussi.akerberg@businessfinland.fi)

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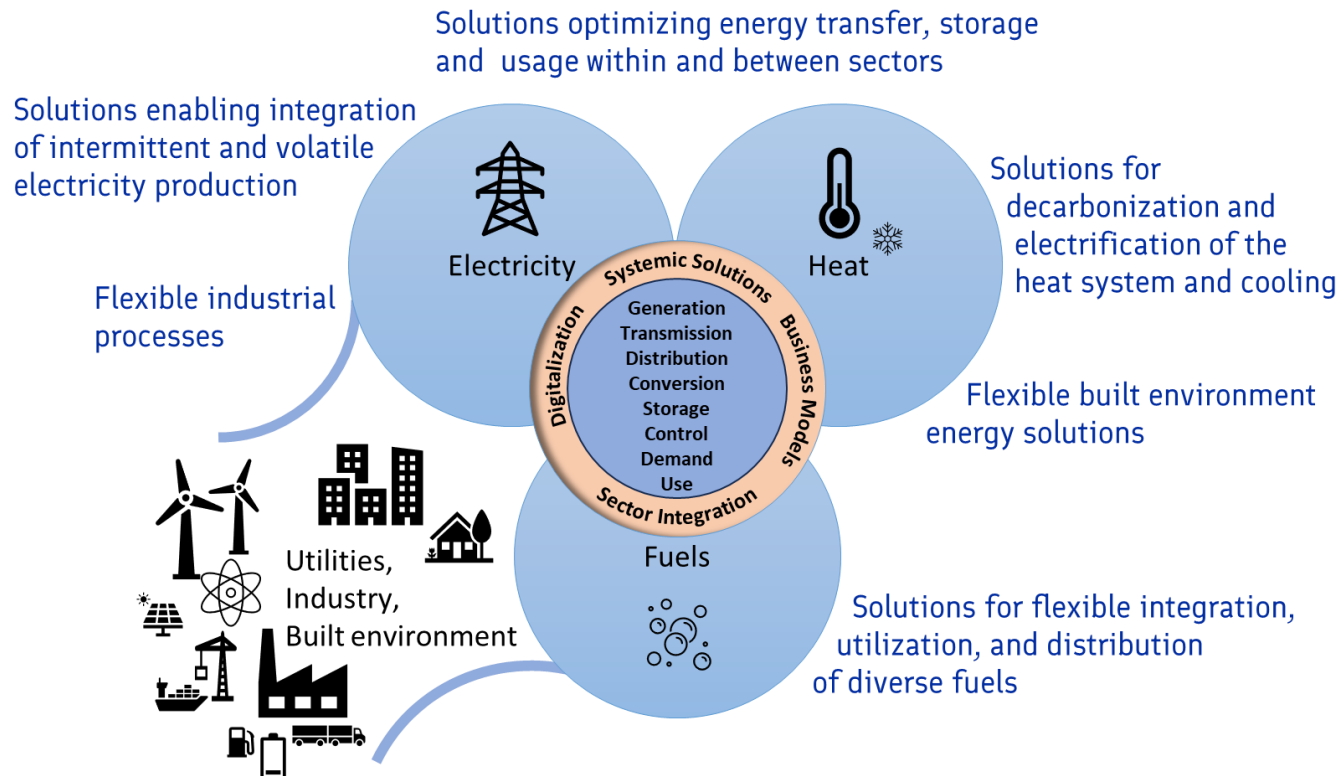




# Flexible Energy Systems

## Business Finland Program 2024-2030

The program serves as a **gateway and platform** for innovation, cooperation, networking, ecosystems, events, information exchange, delegations, export initiatives, and Business Finland services, all **centered around the flexibility theme**.



### Platforms, opportunities, RDI collaboration

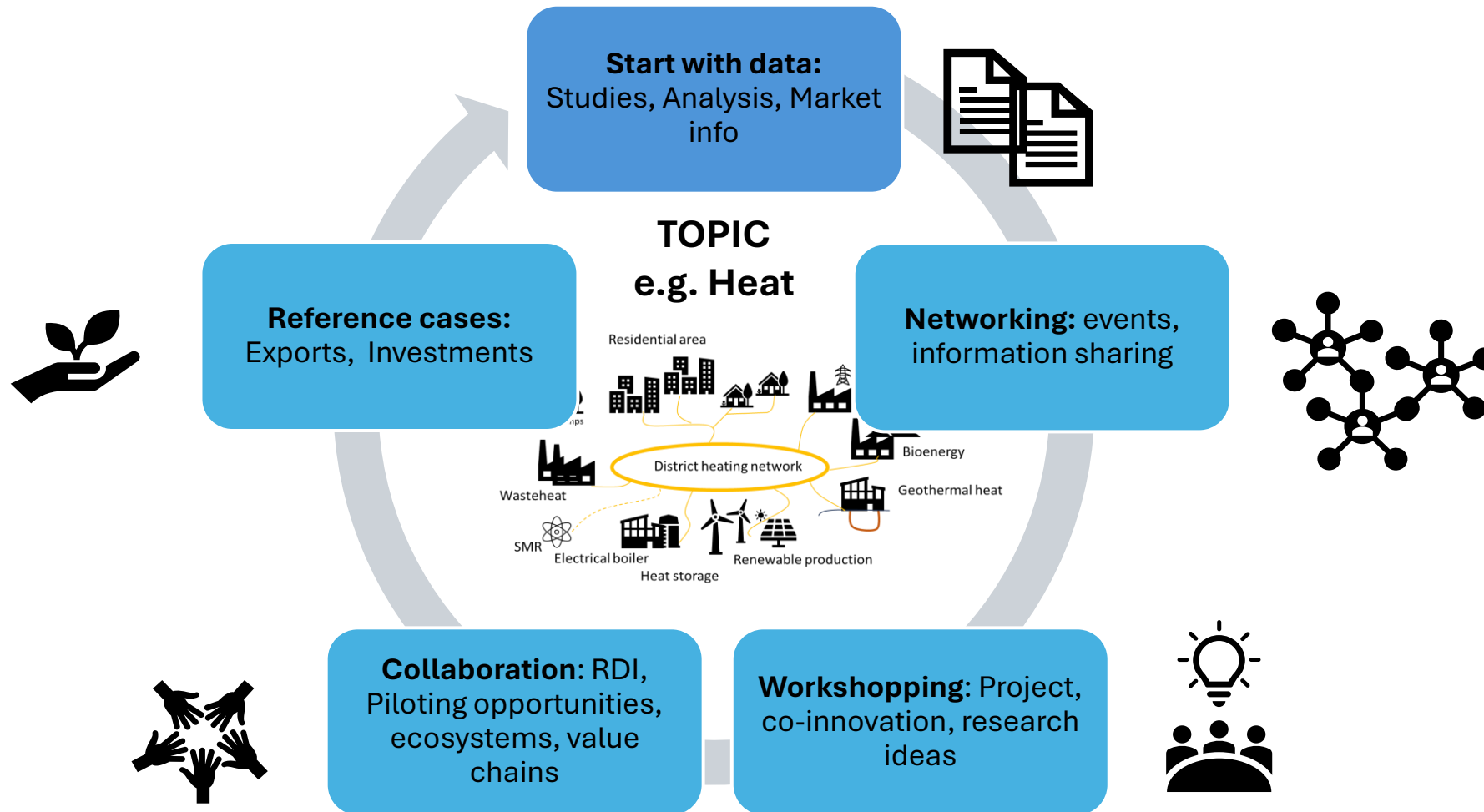
- Initial discussions with multiple national and international parties

### National collaboration

- with Research Council of Finland and RCF energy programs
- with The National Emergency Supply Agency

# Flexible Energy Systems

## Growth and Renewal Through Networks



# EU-instruments for Flexible Energy Systems

## RDI grants

- Horizon Europe
- Driving Urban Transitions (DUT)
- Clean Energy Transition Partnership (CETP)

## Investment preparation

- European Local ENergy Assistance (ELENA)

## Investments

- Innovation Fund – investment grants
- Connecting Europe Facility (CEF-E)
- InvestEU – market-based funding



# Business Finland Funding For the Preparation of Horizon, EDF and Innovation Fund Projects

For companies

- who are involved in the preparation of a Horizon Europe or European Defence Fund (EDF) consortium project or an Innovation Fund project
- with room in the de minimis quota

BF's contribution

- Horizon max 75 % / €60,000
- Innovation fund max 50% / €200,000





## Decarbonized Cities

Creation of cross-sectoral solutions and offerings for cities to reduce their CO2 emissions and to speed-up their energy transition.

Cities in Finland and abroad will have a role as testing and reference platforms, and cities will engage in long-term research and business relationships

- Elina Puszkarzewicz
- Head of program Decarbonized Cities
- +358403433349
- <https://www.businessfinland.fi/suomalaisille-asiakkaille/palvelut/ohjelmat/decarbonized-cities-finland>



- Jussi Åkerberg
- Head of program Flexible energy systems
- +35850 4411199
- <https://www.businessfinland.fi/suomalaisille-asiakkaille/palvelut/ohjelmat/flexible-energy-systems-ohjelma>

## Hydrogen and Batteries

Development and international growth of value chains, technologies, solutions and services in the Finnish hydrogen and battery industry

Driving innovations – investments – policy play – behavioral change



- Ilkka Homanen
- Head of program Hydrogen & Batteries
- +358445774430
- <https://www.businessfinland.fi/suomalaisille-asiakkaille/palvelut/ohjelmat/hydrogen-and-batteries>

## Flexible Energy Systems

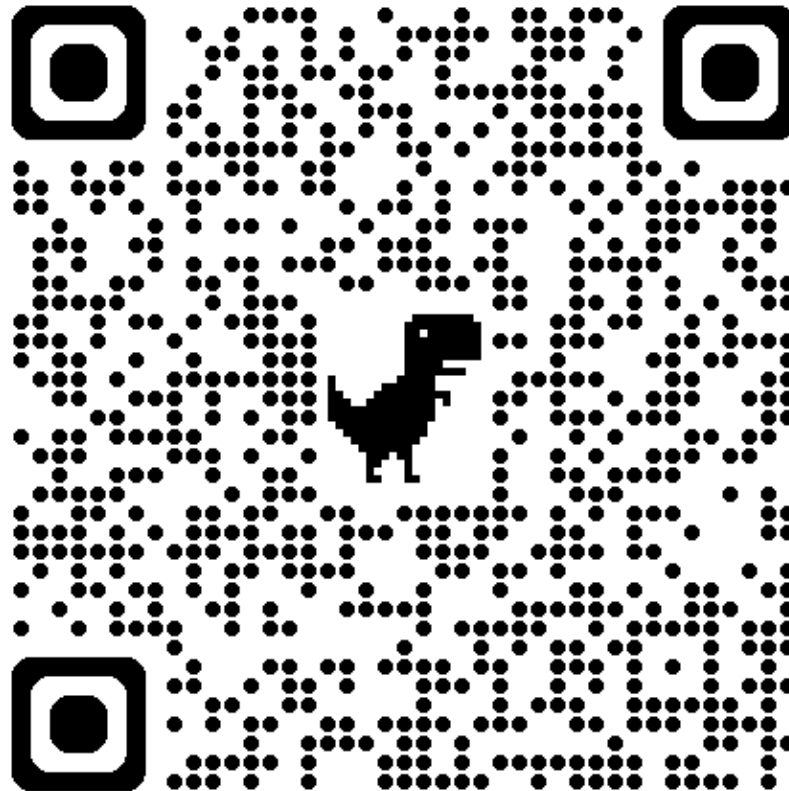
Flexibility is an enabler of the new decarbonized energy system.

Moving from fossil, centralized and predictable power market to renewable, distributed, intermittent and varying production demands substantial innovation, investments and international collaboration.

The scope covers solutions increasing flexibility and interconnecting the energy sectors: electricity, heat and fuels.

# THANK YOU!

Subscribe to Flexible Energy Systems Program newsletter!





# Moderator



**Helena Sarén**

**Head of Zero Carbon Future Mission  
Business Finland**

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# Panel topic: Why it is important for Finland and Finnish companies to be strong part of EU activities in energy



**Annukka Saari**  
Director of Energy and  
Climate, Teknologiateollisuus



**Jatta Jussila**  
CEO, CLIC Innovation



**Tommi Eronen**  
CEO, Polar Night Energy



**Michael Bogomoled**  
Director of Operations  
Development, IONCOR



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# Ending words and closing



**Jarmo Heinonen**

**Senior Director  
Business Finland**

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# Want to hear more?



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[maria.oksa@vtt.fi](mailto:maria.oksa@vtt.fi)

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