



## NORWEGIAN COUNTRY PRESENTATION



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63<sup>rd</sup> Task 1 Meeting – Virtual pre meeting presentation

# What is IEA PVPS?

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- The International Energy Agency (IEA), founded in 1974, is an autonomous body within the framework of the Organization for Economic Cooperation and Development (OECD).
- The Technology Collaboration Programme was created with a belief that the future of energy security and sustainability starts with global collaboration. The programme is made up of thousands of experts across government, academia, and industry dedicated to advancing common research and the application of specific energy technologies.

# What is IEA PVPS?



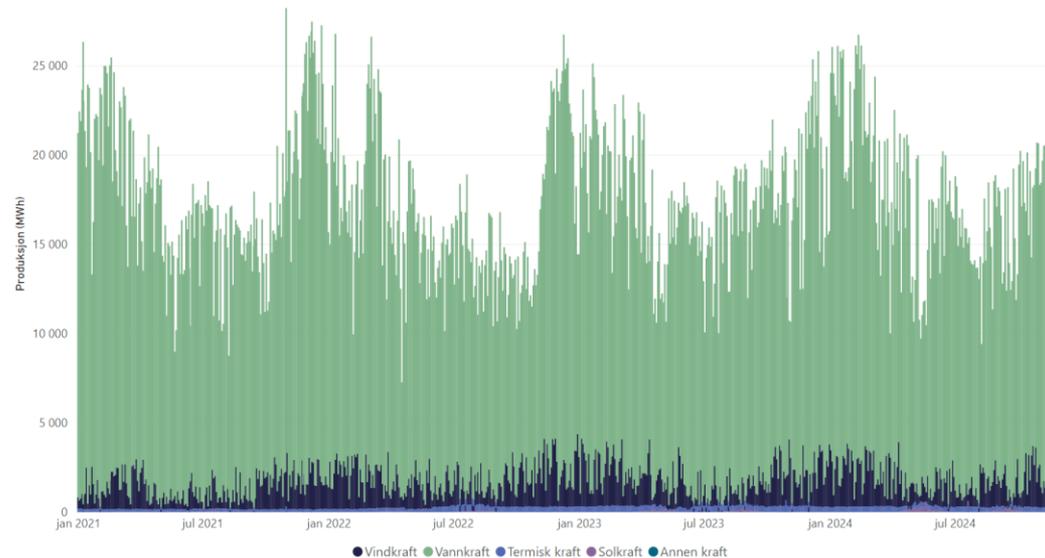
- The IEA Photovoltaic Power Systems Programme (PVPS) is one of the Technology Collaboration Programme established within the International Energy Agency in 1993
- 32 members - 27 countries, European Commission, 4 associations
- *“To enhance the international collaborative efforts which facilitate the role of photovoltaic solar energy as a cornerstone in the transition to sustainable energy systems”*



# Norway – general information



- Population: 5.5 million
- Total electricity demand: 130 - 140 TWh
- Share of renewables: > 100%
- Share of solar: < 0.5%
- EV market share ~ 90%
- Households energy use > 98% renewable



Source: Elhub

# Norway – Energy Transition

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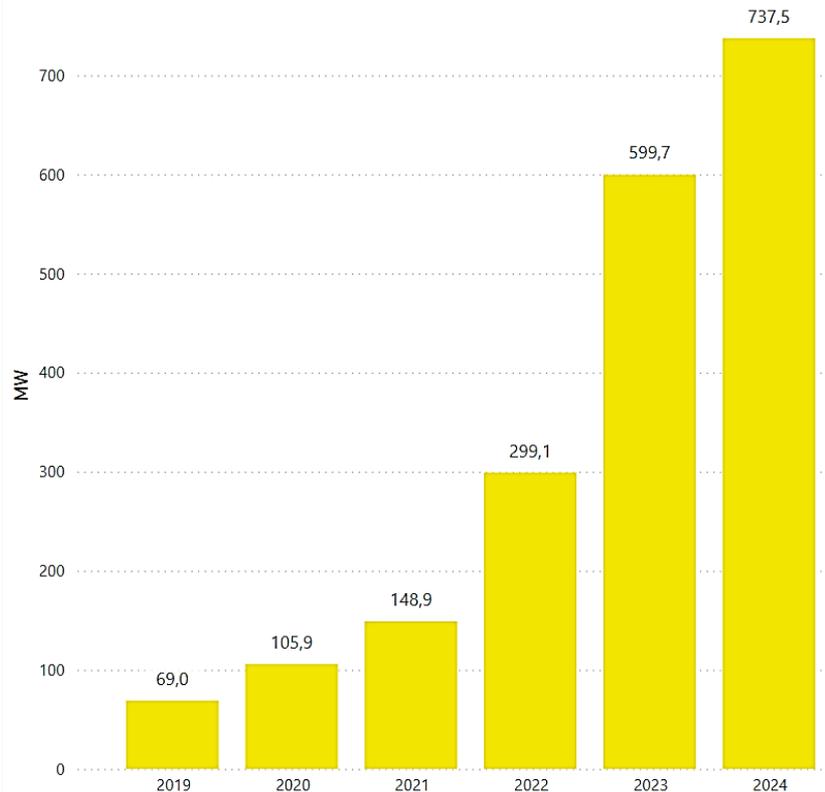


- The energy transition in Norway is mainly about **electrification of industry and transport**.
- Onshore wind the cheapest, but the opinion is against, and our remaining rivers are protected.
- Offshore wind has been the big topic, with a target of **30 GW** opened to build within **2040**.
- In 2023, we got an official target of **8 TWh PV** within **2030**.
  - Now at 500 GWh, and installations decreasing, this does not seem realistic.

# PV Market evolution



## Cumulative capacity [MW]



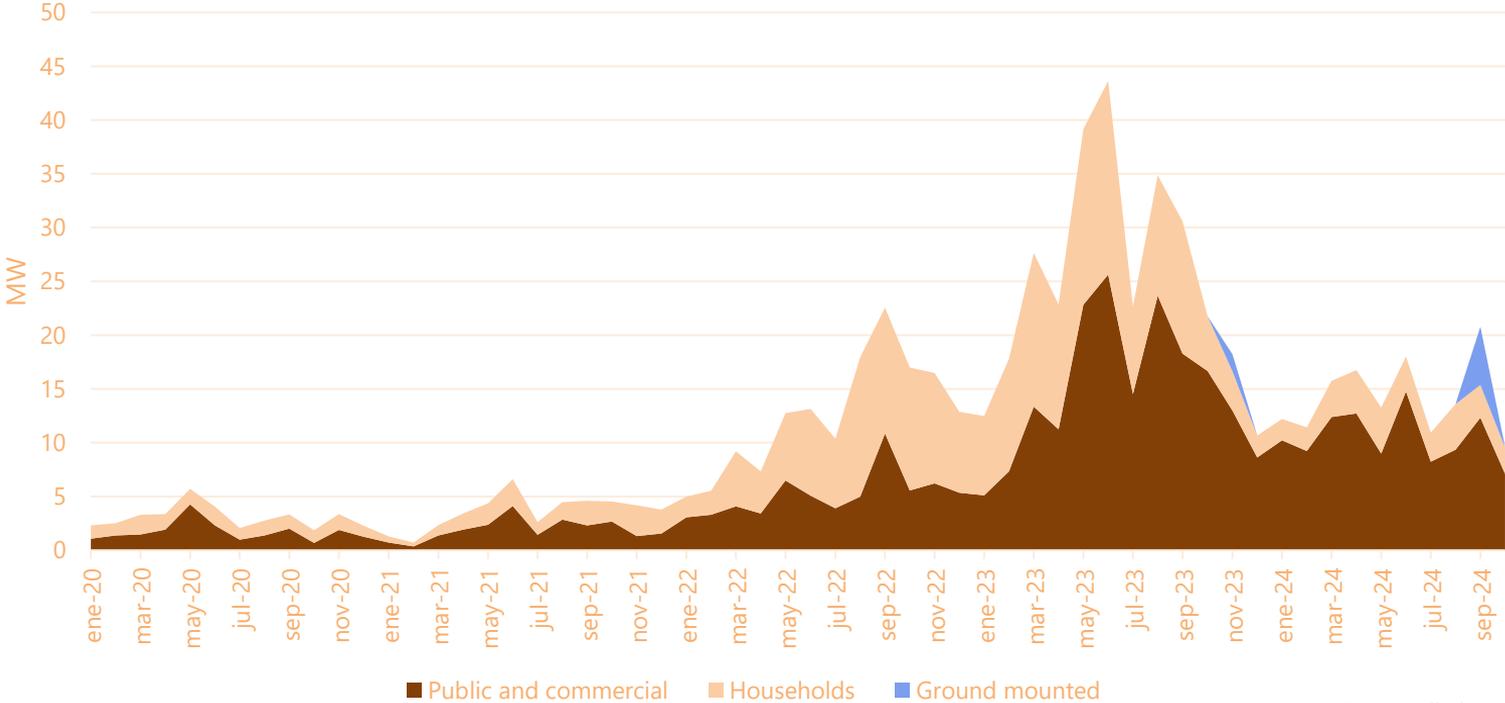
Year	Annual [MW]	Systems
2019	69,0	4476
2020	36,9	2054
2021	43,0	2358
2022	150,2	7667
2023	300,6	11745
2024	137,8	4015
<b>Totalt</b>	<b>737,5</b>	<b>32315</b>

Source: Elhub

# PV Market evolution



### Monthly installations



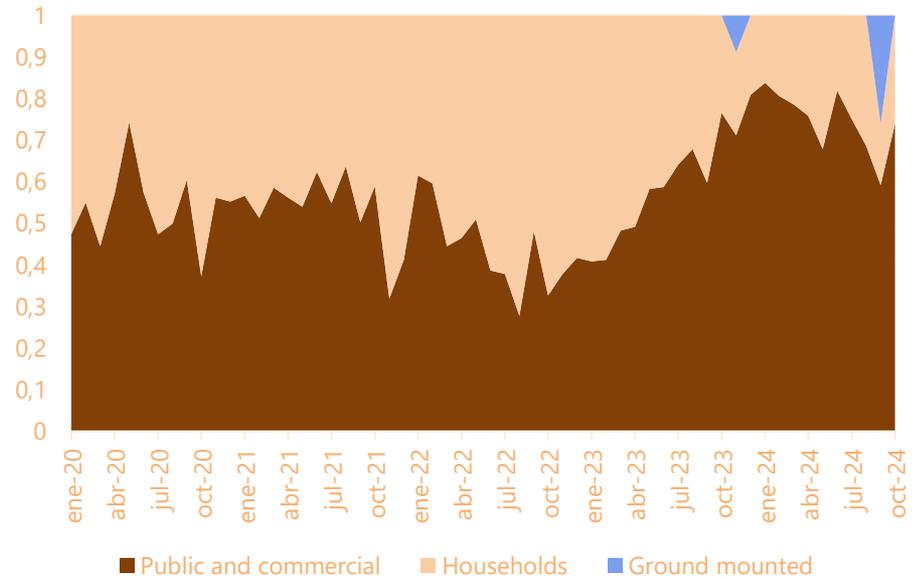
Source: Elhub

# PV Market segments



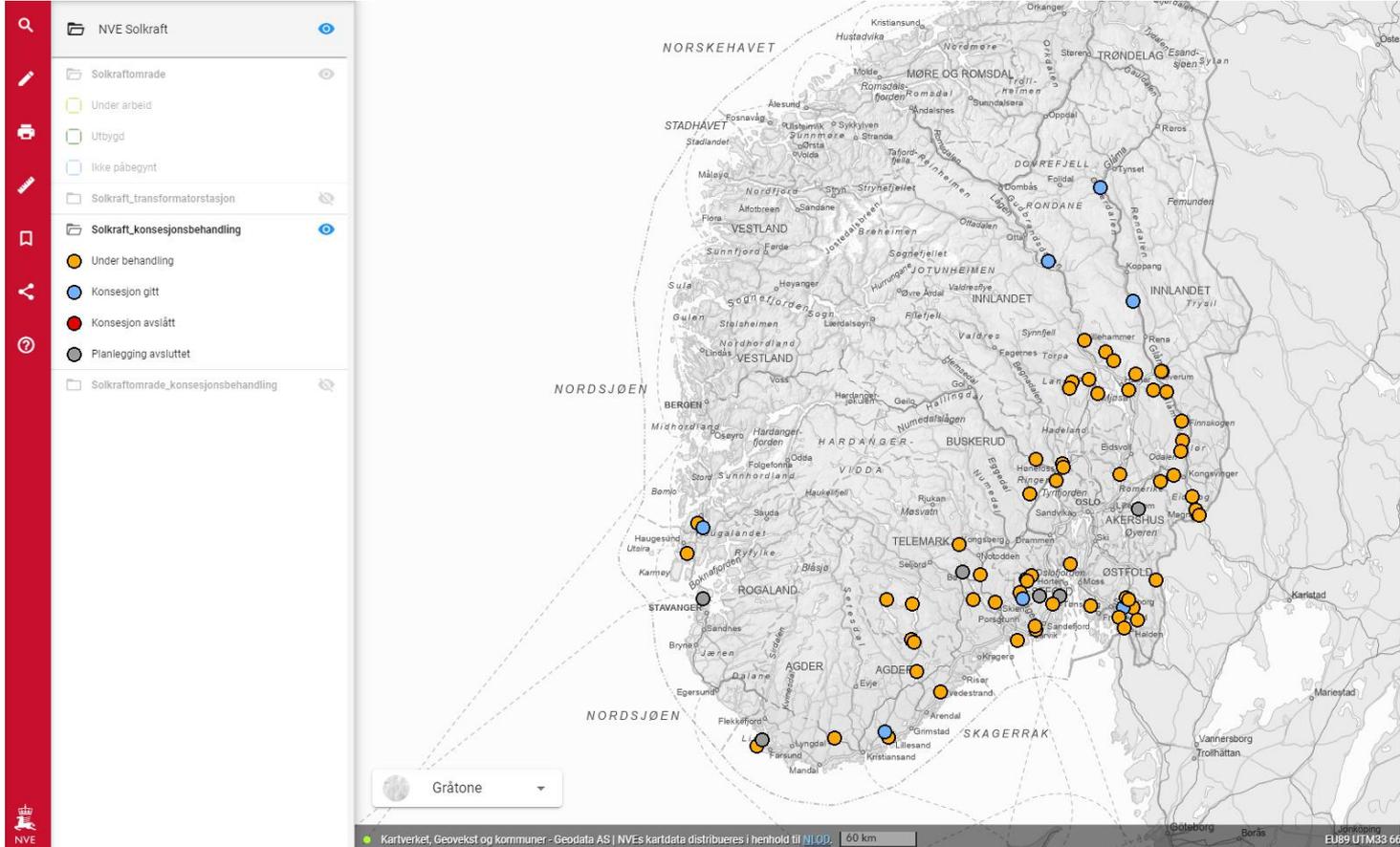
- Still distributed, rooftop, self-consumption is dominating everything
- Household market “has stopped”
- And ground mounted projects are coming up..

Monthly installation share



Source: Elhub

# Ground mounted projects are coming

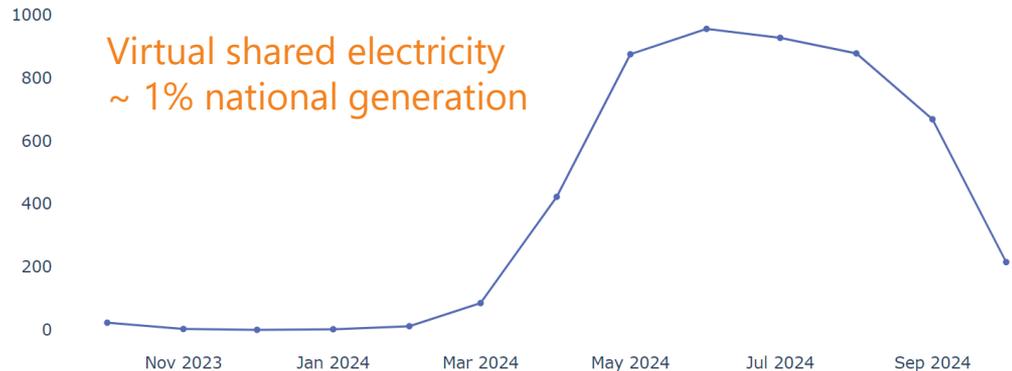
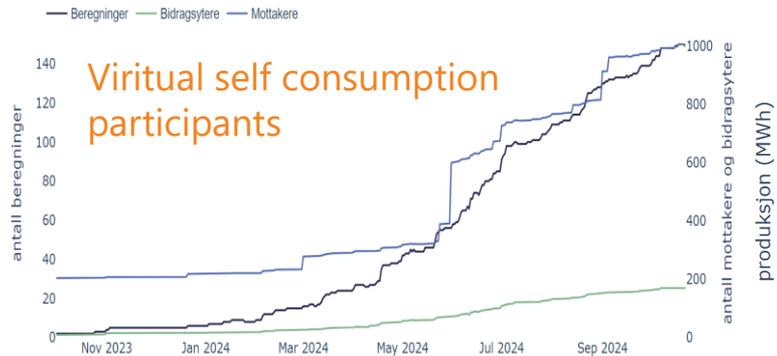


# Overview of market drivers



- The main key driver should be the electricity market, but economics of PV is washing away with cannibalisation (imported)
- Investment subsidy for residential PV systems is still the main support mechanism
- Virtual self-consumption for apartment buildings was introduced last year
- Virtual self-consumption for commercial/industrial areas are under development

PVPS



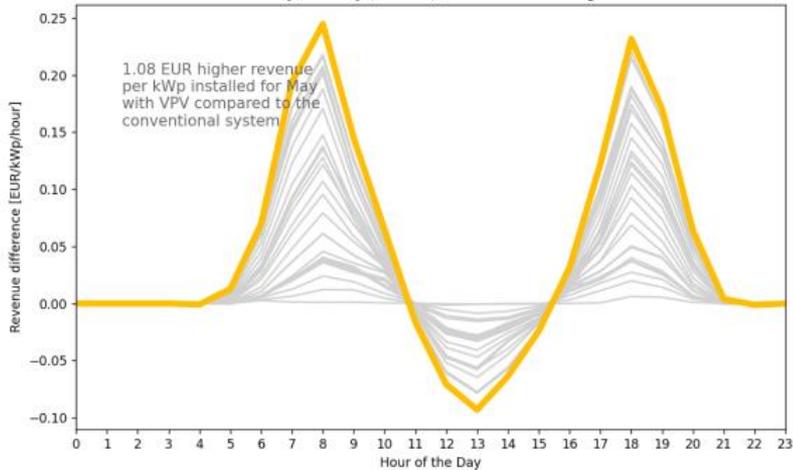
Source: Elhub

# Showcase system



- Norwegian technology
- Vertical
- Rooftop

Comparison of cumulative hourly revenue difference per kWp installed capacity between Over Easy VPV-system and conventional PV-system for each day in May 2024 in Vestby, Norway (lat. 59°), for the NO1 bidding zone



PVPS

Source: OverEasy



Photo: Jarand Hole

# PV Industry

- Still relevant
- The last 18 months has seen both REC and Norwegian Crystals shut down in Norway
- We visited NorSun in April, and the situation is still the same



Photo: Thomas Bjørnflaten

# Key subjects of the past 6 to 12 months

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- Market/installation decrease and reasons for this
- Where to build PV in Norway?
  - Official bodies point to “grey areas” but project applications come in forest
- How to reach our target of 8 TWh in 2030?
  - PV economics and grid constraints are the main barriers
- Complaints on time to treat licenses for ground mounted
- A lot of focus on broader virtual self-consumption schemes

# Social acceptance in your country

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- Even areas which deliver no eco-system services can have conflicts of interest
- First declined ground mounted system



# NSR – what, who, why !

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- We will be discussing and revising NSR's in the meeting, please provide your input to the discussion here.
- Will most probably not do a NSR this year either.
  - Have more information for the “simplified NSR data collection this year”.
- If I would write it, I could do it earlier
  - The earlier the better, for relevance.

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