

# TYNDP Scenario Report 2020 and forward



## Heat sector in current ENTSO-E scenarios

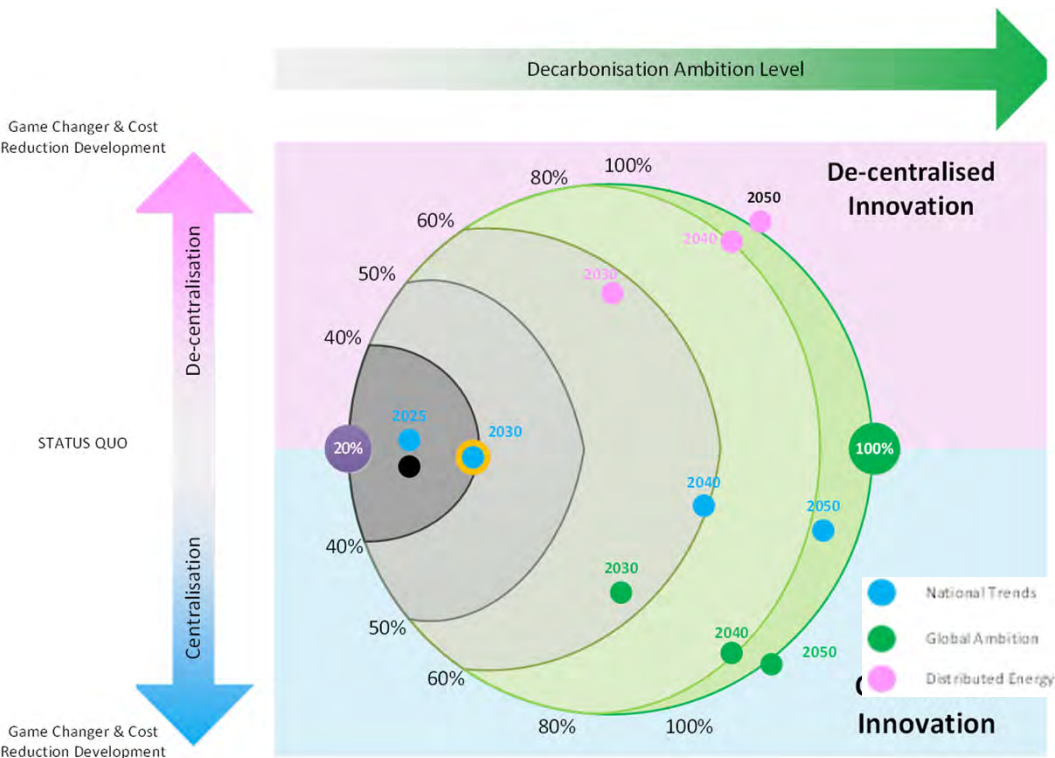
Pathways towards climate neutrality of the heat sector by 2050 using Power-to-Heat technology



2 September 2020



# TYNDP 2020 Scenario Storylines



## National Trends (NT)

- **Policy Scenario** based on draft EU National Energy and Climate Plans (NECPs)
- EU 2030 Energy and Climate Framework (32 % RES, 32.5 % energy efficiency)
- EC 2050 Long-Term Strategy: 80 – 95 % CO<sub>2</sub> reduction

## Distributed Energy (DE)

- De-centralised approach to the energy transition: active customers, small-scale solutions, circular approach.
- **COP 21:** +1.5°C target with 66.7 % probability
- Carbon neutrality by 2050

## Global Ambition (GA)

- Future is led by economic development in centralised generation, with large-scale renewables and decarbonisation.
- **COP 21:** +1.5°C target with 66.7 % probability
- Carbon neutrality by 2050

Note: TYNDP 2020 GA and DE storylines are a continuation of TYNDP 2018 *Global Climate Action* and *Distributed Generation* storylines

**Contrasted scenarios reflecting very different pathways to reach EU targets**

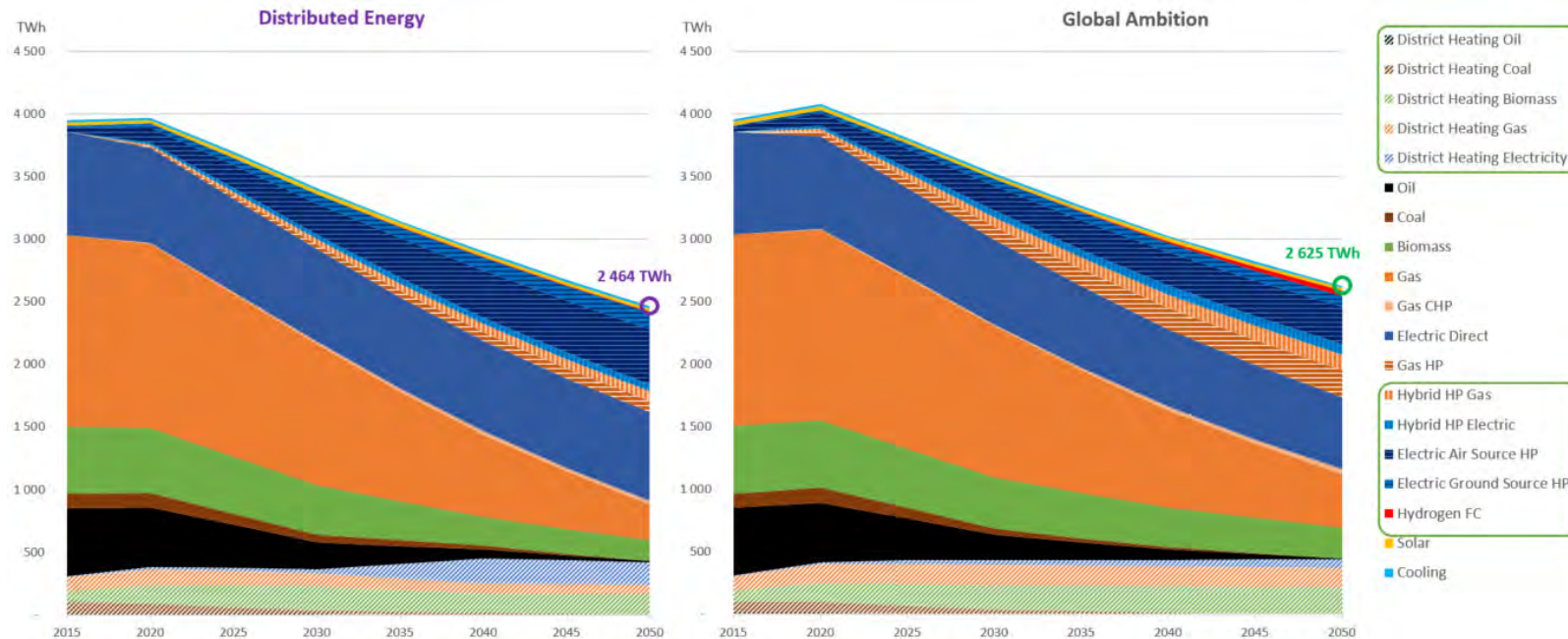
## Scenario finalisation

- Main stakeholder feedback on the draft report published in November 2019:
  - Lack of scenario differentiation
  - Electrification and RES development could be higher
  - Concerns regarding biomass use
- ENTSOE and ENTSG have updated the Distributed Energy accordingly by limiting biomass use within the range of 1.5 Tech/Life scenarios and increasing accordingly Wind and PV capacity for further electrification through:

| Electricity demand increase in 2050     | TWh       | Technology             |
|---|-----------|------------------------|
| Residential & Tertiary (heat & cooling) | 58        | HP on district heating |
| Transport                               | 50<br>905 | EV<br>e-liquid         |
| Industry                                | 126       | Direct electrification |



# Heating and cooling in Scenario Report 2020



- Higher insulation in Distributed energy leads to an overall lower heating/cooling need
- In both scenarios HPs become the main stream technology with hybrid ones more developed in Global Ambition as methane supply is larger
- District heating amounts for 19% of heat demand in both scenarios with HP being predominant in DE and biomass in GA

# Enhancing sector coupling for next editions

- For the heat/cooling sector, it means both:
  - Defining 2 paths for energy need (e.g. way of life, insulation, digitalisation...) and technology stock
  - Capturing the flexibility offered to the overall energy system (e.g. hybrid HP, district heating...)
- Recovered heat (industry, power generation, data centres, electrolysis...) and the potential role of hydrogen need to be further explored.
- In order to bring sectorial knowledge together, ENTSOE and ENTSG has launched an enhanced stakeholder engagement process:
  - Bilateral meetings are organized in June-July
  - A webinar on storyline has been organized on 3 July
  - Draft storylines (based on aforementioned engagement) will be submitted to public consultation in Oct./Nov. 2020
- Within this framework, close cooperation has been established with DSO and district heating associations in order to identify both quick-wins for the 2022 report and longer term improvements for future editions.

# Thank you for your attention

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