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From: [redacted]eurelectric.org>
Sent: Tuesday, February 25, 2020 6:17 PM
To: [redacted]
Cc: [redacted]
Subject: Follow-up Eurelectric meeting 12 February

Dear M[redacted]

Thank you very much for the meeting we had together on February 12th on the TEN-E revision . As promised please find some materials on distribution grids that could be of interest for you :

1. **Eurelectric's Decarbonisation study (2018)- on the key role of electrification and the level of decarbonisation ambition**. We examined what is needed to speed up the transition and reach carbon neutrality before mid-century, *while* electrifying other sectors.

    - We have modelled 3 deep decarbonisation scenarios based on electrification of key economic sectors (including transport, buildings and industries) ranging from -80% to -95% decarbonisation compared to 1990 levels (slide 11 and 15).

    - 60% of direct electrification is required to achieve a 95% decarbonisation of the European economy. Direct electrification is the most energy and cost efficient way to do it in most places. The key role of electrification has been recognized by the European Commission in its Long Term Strategy.

    - The European power sector is carbon neutral by 2045 based on renewables (wind off/on shore and solar- 80% of total capacity), nuclear , hydro, storage – (Slide 59). According to the JRC , 90% of distributed resources are installed at DSO level, we expect this figure to remains at this level in the future.

- With type of mix with very high amounts of variable RES, you also need to balance the system and ensure security of supply. We foresee a stronger role for Demand side response (120GW to 150GW)- that could be provided by from electric vehicles, heating and cooling of buildings as well as from some industrial processes (Slide 63-67) . This system wide shift is clearly enshrined in the Clean Energy Package.

- As **Key enabler** – we have identified a **smarter and reinforced distribution grid** that integrates new market participants (e.g. decentralized solar PV and local flexibility sources), and plays a significant role in consumer empowerment through managing local congestions and redispatch, security of supply and grid resilience issues. (slide 74)

- A revised **TEN-E regulation can therefore play a pivotal role in facilitate decarbonisation towards electrification by leveraging on cost-effective renewables integration at local level , facilitating EV recharging infrastructure and electric heating infrastructure deployment**.
  - District heating and cooling are expected to keep on playing critical roles in some geographies, while 45% to 63% of buildings energy consumption could be electric in 2050 driven by adoption of electric heat pumps. Our study foresees direct electrification of space and water heating to go up to 44% in the most ambitious scenario. In some countries such as Germany, the impact of electrification of heating at low and medium voltage grid is expected to as high as the EV deployment.
  - In transport, we foresee that 63% of total final energy consumption will be electric in our most ambitious scenario (**slide 28-30**) Based on recent agreed objectives on Car Co2 targets (37.5% for 2030), we estimated that 30 million EVs will be on the road by 2030 and connected to the distribution's grid.

1. **Eurelectric's Value of the Grid Paper** – giving an overview of distribution grids new role and contribution to EU energy and climate objectives (Main summary and p.19 of the doc)

2. **Factsheet on EU funding in distribution grids (enclosed) -** giving an overview of DSO projects funded/ financed by EU instruments (CEF, Cohesion Funds, EFSI) between 2014 and 2019 - based on EU open datas. Please note it is a work in progress.

3. **Additional requests** – I've noted you were keen on receiving more information on :

- bottlenecks at distribution grid level and potential cross border effects resulting from investment gaps
- flexibility platforms investment needs

- cybersecurity investment needs

We are currently collecting concrete cases and supporting datas among our members and I hope will get back to you shortly.

Any further guidance on needed datas and on the foreseen timeline on the process would be highly appreciated.

In the meantime, I remain at your disposal for any further information.

Best regards

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Eurelectric aisbl — Boulevard de l'Impératrice, 66, 1000 Brussels, Belgium