

## Finalisation of the national energy and climate plans (NECPs):

### Recommendations on how to stimulate demand for use of renewables-based electricity in industry

These recommendations were built based on the workshop WindEurope held on 16 April 2024 with the European Commission, national ministries, think tanks, technology providers, and end-users such as the paper and pulp, chemicals, and aluminium sectors. The workshop highlighted the importance of aligning energy and climate policies with industrial decarbonisation goals and infrastructure planning.

#### Measure 1: clear substantiated strategies for use of renewables-based electricity in industry

*Six Member States out of 26 had included a target for electricity from renewable energy sources (RES-E) in industry in the draft NECPs. Six Member States have included a target for Renewable Fuels of Non-Biological Origin (RFNBOs) in industry.*

*According to the recast Renewable Energy Directive (RED III) (Article 22a), Member States should increase the share of renewable sources in industry sector by an indicative 1.6 percentage points as an annual average calculated for the periods 2021 to 2025 and 2026 to 2030. RFNBOs in industry should represent at least 42% of the hydrogen used in the sector by 2030, and 60% by 2035. This needs to be reflected in the NECPs.*

#### **Recommended actions:**

- Include a clear strategy for the uptake of **renewables-based electricity** in industry, especially for process heat, using mechanisms to incentivise direct electrification and the respective necessary investments.
- Indicate how much renewable energy would be made available for industry. This will provide **long-term visibility** and clarity.
- Diligently **implement** the RED III targets. Apply deterrent if targets are not met.

#### Measure 2: Industrial process heat solutions

*Two thirds of final energy consumption in industry relate to process heat. Electricity makes up only 4% of that. Thus, European industry has enormous potential for electrification, particularly in sub-200°C temperature ranges – half the heat consumed in industrial processes. Heat pumps are already a mature technology for efficiently supplying heat.*

*Moreover, in thermal energy storage (TES) energy is stored at temperatures of more than 500°C. TES makes it possible to decouple heating or cooling demand from power generation. Such decoupling offers many important benefits, including greater efficiency, flexibility, security, and reliability in energy supply, while also reducing costs and greenhouse gas emissions.*

#### **Recommended actions:**

- Introduce measures to support the uptake of direct electrification solutions such as **heat-pumps, electric boilers, and thermal energy storage** in the industrial sector, e.g., by increasing awareness about large-scale electrified-heat applications.
- Make large **heat pumps** a default option for industrial heat up to 200°C.
- Collaborate with industry to tap into the potential of **waste heat**. Regulate the use of on-site waste heat recovery.

### Measure 3: Taxation of electricity, tariff structure and time-differentiation

*Electricity prices for medium-sized industrial consumers are more than 3.5 times higher than fossil gas prices in Germany and Belgium; more than 3 times - in Italy, Slovakia, and Ireland; and more than 2.5 times - in Hungary, Austria, and Poland.*

*Taxes and levies account for a significant share of the final prices consumers pay for electricity in the EU. These costs are not directly related to the supply of electricity. They penalise the use of electricity and create barriers to electrification.*

*Moreover, most European countries put significantly more taxes and levies on electricity compared to fossil gas (on average, 2.3 times more) for medium industrial consumers. Germany and Belgium have the highest taxes and levies on electricity in the EU. Only Portugal, Sweden and Finland have higher taxes levies on fossil gas than electricity. In the Netherlands, it is almost equal.*

#### **Recommended actions:**

- Ensure that **energy taxation** is aligned with climate objectives.
- Review **non-energy related charges**. Network tariffs should recover the costs of operating, maintaining, and developing the network. These tariffs should therefore not include any taxes, levies or charges not related to the activity itself.
- The **pricing structure** should be one that provides the appropriate economic signals for electricity use. For example, **Time-of-Use (ToU) tariffs** improve cost-reflectiveness and provide better price signals than flat tariffs. ToU tariffs help promote innovation in retail markets and demand response. They facilitate electrification, and could help reduce grid losses, reinforcement needs and congestion costs. Moreover, **flattening peaks** can also help optimise network investments and consequently reduce their impact on network tariffs.
- Address persistent hurdles, such as **double taxation**, to incentivise energy storage.

### Measure 4: Power Purchase Agreements and Heat Purchase Agreements

*Long-term contracts allow the purchase of renewable energy at a predefined and stable price between energy suppliers and corporate off-takers.*

#### **Recommended actions:**

- Fully implement Article 19a of the Electricity Market Design reform including promoting the **uptake** of renewable corporate power purchase agreements (PPAs) and removing **barriers** to such contracts. Barriers include permitting, grid connection, and slow pace of electrification which stalls demand; as well as negative electricity prices, electricity market interventions, and shaping/firming costs. Education/know-how about PPAs is a key barrier for corporates where their core business is a non-energy service or product.
- **Guarantees of origin** (GOs) are the centrepiece of PPAs, as they certify that the electricity being purchased is from the specific renewable generator to which the agreement relates. All renewables' projects must issue GOs, including small renewables projects. All EU Member States must join the Association of Issuing Bodies (AIB) to implement an EU-level standard registration process. Running both operation licence and GO registration processes in parallel should be permitted. The GO administrative system must be less burdensome (cost and administratively).
- Ensure that instruments to reduce the **financial risks** associated with off-taker payment default in the framework of PPAs, including guarantee schemes at market prices, are accessible to companies. Take learnings from Spain, France, and Norway where the guarantee schemes are chronically under-used, and design an attractive and functional product for corporate off-takers to prove bankability to sign a PPA.

- Provide more **visibility** on how much new generation is expected to come through support schemes and how much – from PPAs. This would provide clarity to industry how much electricity available to make electrification decisions. Ensure that there is a level playing field between Contract for Difference (CfD) projects and PPAs to avoid the ‘crowding out’ of private financing of new renewable energy assets via a PPA. Combining CfD and PPA in the same project is a smart way to utilise both public and private capital. Take learnings from the UK offshore wind sector where maximum corporate capital was secured via PPAs.
- Promote the use of **Heat Purchase Agreements** and ensure there is a strong business case and supporting regulatory framework that makes its simple and cost-effective for corporate-offtakers.

### Measure 5: Network planning

*Currently, there is misalignment between national grid plans and NECPs. Grid plans are based on RES-E targets which are often outdated. Therefore, regulatory frameworks in many European countries are holding back forward-looking grid planning.*

*Financing the necessary grid expansion and reinforcement at national level based exclusively on grid tariffs is not politically viable. Existing EU instruments are too small to fill the gap between what can be delivered with grid tariffs and the massive investment needs.*

#### **Recommended actions:**

- Develop the forward-looking, coordinated, and holistic **power system planning** required to achieve our climate and energy goals.
- Implement tools that provide **visibility**, including visibility from developers of project pipeline and visibility of available grid hosting capacity. National Authorities should incentivise System Operators to apply harmonized EU criteria for calculating **grid hosting capacity**, based on realistic assumptions and potential optimisation solutions. TSOs and DSOs must provide transparent, regularly updated data on current and planned grid capacity through dynamic management of connection queues.
- Ensure that the targeted renewable energy capacities and electrified demand set out in the NECPs can be accommodated with the current **national Network Development Plans (NDPs)**. Update these NDPs more regularly, break them down into specific grid projects, not total capacities, both at transmission and distribution level. Plan further ahead (>10 years) considering national electrification strategy and RES acceleration areas, lead times to deploy various technologies, supply chain needs and technology readiness.
- Enable TSOs and DSOs to make **anticipatory investments** in grid expansion, reinforcement, modernisation, efficiency and flexibility, for example by differentiating between anticipatory and other investments. Apply **total expenditure (TOTEX)**-based Cost Benefit Analyses for anticipatory investments and improve them to account for all benefits, constraints, short- and long-term costs. Quantify the impact of grid build-out delays on social welfare including CO<sub>2</sub> emissions, electricity prices evolution and congestion management costs.
- Explore **new finance tools** for electricity grids through general taxation schemes, support by the EIB or national promotional banks, other national or EU funds combined with private finance.
- Apply common **EU frameworks** to anticipate investments and risk, to assess grid hosting capacity for new renewables, to evaluate efficiency and modernisation indicators and flexibility potential.
- Move away from bottom-up approach by considering benefits of all RES projects, optimal infrastructure and planning at **sea basin level** and at the regional level, e.g., via the high-level groups. Coordinate infrastructure planning and supply chain needs accordingly.
- Coordinate with relevant Member States and stakeholders on developing the methodology for the **transmission access guarantee (TAG)**, but also **mitigate risks beyond TAG**. Identify solutions for cross-border cost sharing to finance TAG, grid plans and development at national level, cross-border revenue stabilisation and participation in long-term, intraday, balancing markets.

- Allow flexible connection contracts for generation as **voluntary choice and with reduced network charges for the flexible capacity**, both at distribution and transmission level, but **temporary** until necessary grid reinforcement takes place.
- Deepen **stakeholder engagement** and awareness from early planning stages. This will also help to realistically assess technology readiness and supply chain capacity.
- Establish **efficient coordination** between electricity and **gas planning** and stakeholders and clear legislative mechanisms to trigger the phase out or repurposing of gas infrastructure.
- Incorporate targets of **repowering wind farms**.

### Measure 6: Demand Side Flexibility

*Demand side flexibility refers to enabling end-users to become active in the market. It also enables system operators to make best use of flexibility to ensure efficient system operation on a regional level. Demand side flexibility will also encourage industry to use electricity when it is cheaper and thereby increase industrial competitiveness.*

#### **Recommended actions:**

- **Flexibility market products** and long-term revenue stabilisation mechanisms should be made for fit for purpose to incentivise demand side flexibility and with a clear net-zero mandate and the right milestones to reach climate targets.
- Set up a comprehensive **strategy on flexibility**. According to the Electricity Market Design reform, Member States will have to apply an EU-wide methodology to assess their flexibility needs biannually for the following 5-10 years.
- Provide a **precise flexibility assessment**, on an hourly, daily, weekly and seasonal basis; it should be technology neutral and in line with climate neutrality.
- Include a **flexibility target** which should be technology-neutral and in line with the objective of climate neutrality.
- Implement the **Network Code on Demand Response** in a harmonized way to avoid market fragmentation across Europe. to avoid market fragmentation across Europe. This includes implementing flexible connection agreements, which should be voluntary, temporary, and with reduced network charges for the flexible capacity.

### Measure 7: Funding and finance

*All finance flows must be consistent with Europe's climate and energy objectives. The investment frameworks should therefore work to mainstream electrification. This will channel investment to where it is most needed.*

*Energy taxes are collected on the sale and consumption of oil, electricity, and gas. As EU Member States reduce their reliance on fossil fuels, these tax revenues will decrease.*

#### **Recommended actions:**

- Enhance flexible **State aid** schemes to support non-fossil technologies to ensure that electricity supply matches demand.
- Make electrification of heat (especially, very high temperatures) a priority for **Research & Innovation**. The technical potential for electrification in industry is high, but significant innovation and deployment is required.
- Explore new forms of **fiscal revenues** to ensure adequate funding for the transition.
- Support **private investments** into the green transition through grants, preferential loans or financial de-risking.