

A Vision for a European Energy System Based Only on Renewables and Energy Efficiency

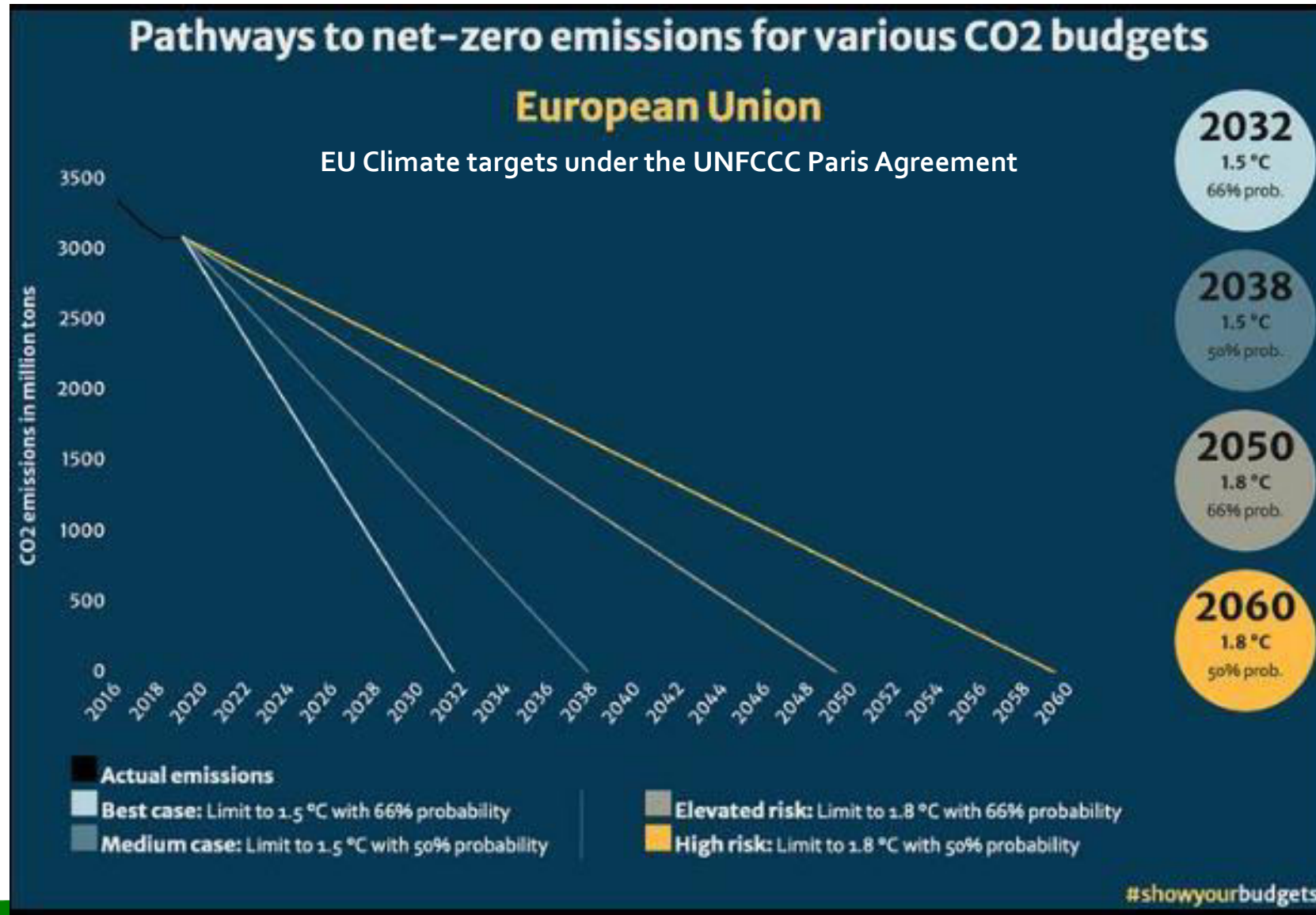
All Things Energy Forum
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Dirk Hendricks
Secretary General
Dirk.Hendricks@eref-europe.org

www.eref-europe.org

EREF | European
Renewable
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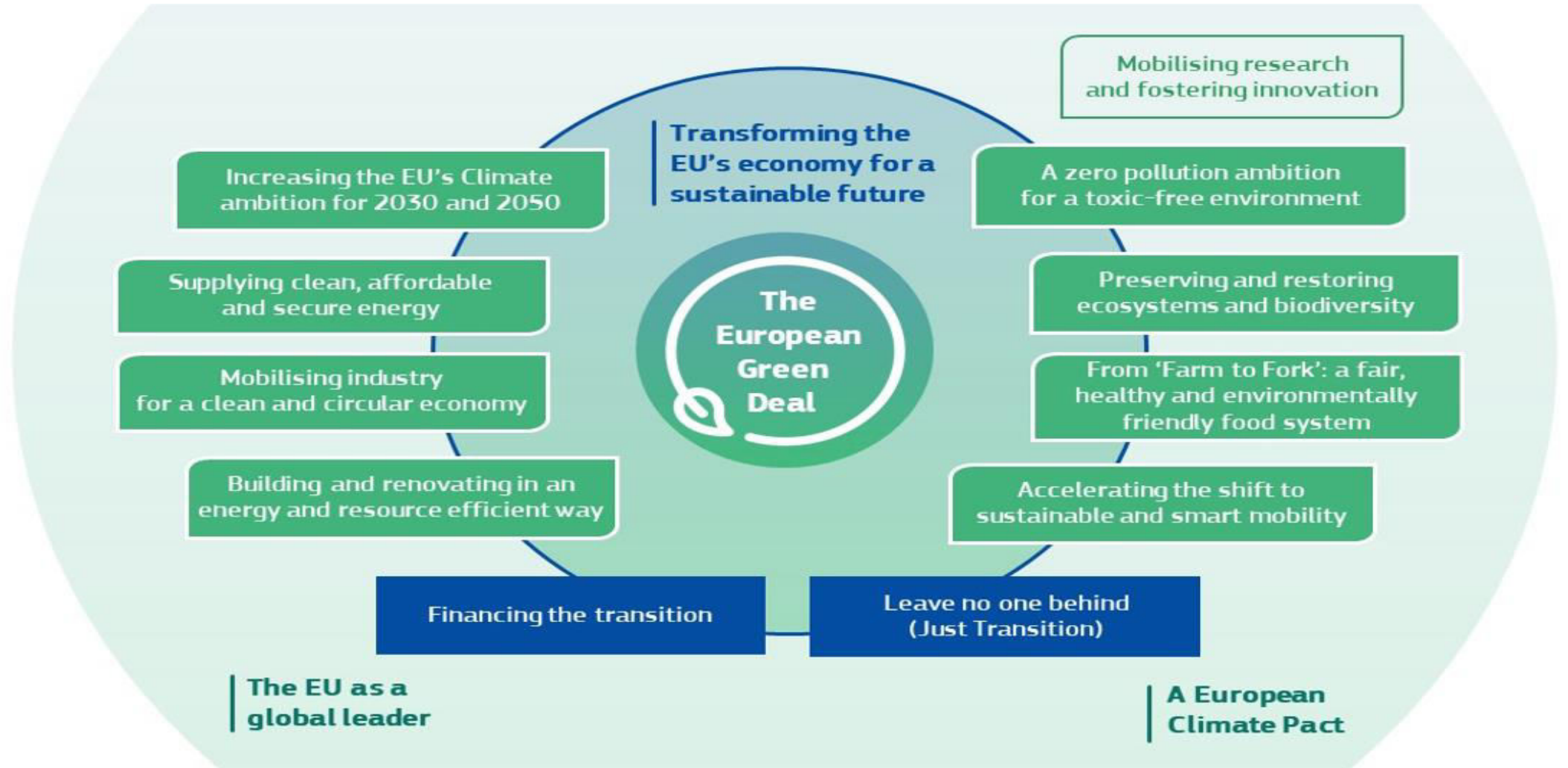
The urgency to act



UNFCCC COP 21, Dec 2015: the start of a global energy system transformation

- 195 governments agree on a new international climate treaty
- Increased level of political commitment worldwide and national climate and energy plans
- One of its aim: “to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.”
- Additional support for the EU’s ambition to “become the world number one in renewable energies”
- Implementation of the European Green Deal as an economic measure against the effects of the COVID epidemic

The European Green Deal



Target architecture in the EU Climate Change Act

EU target: Reduction of GHG emissions net (i.e. including removals) by at least 55% by 2030 compared to 1990 levels

- Separate interim target 2040 (Regulatory Act in the ordinary procedure)
- Indicative GHG budget 2030-2050
- Indicative linear target deposit for assessment

EU target: Offset Union-wide GHG emissions and removals by 2050, with emissions redirected to net zero

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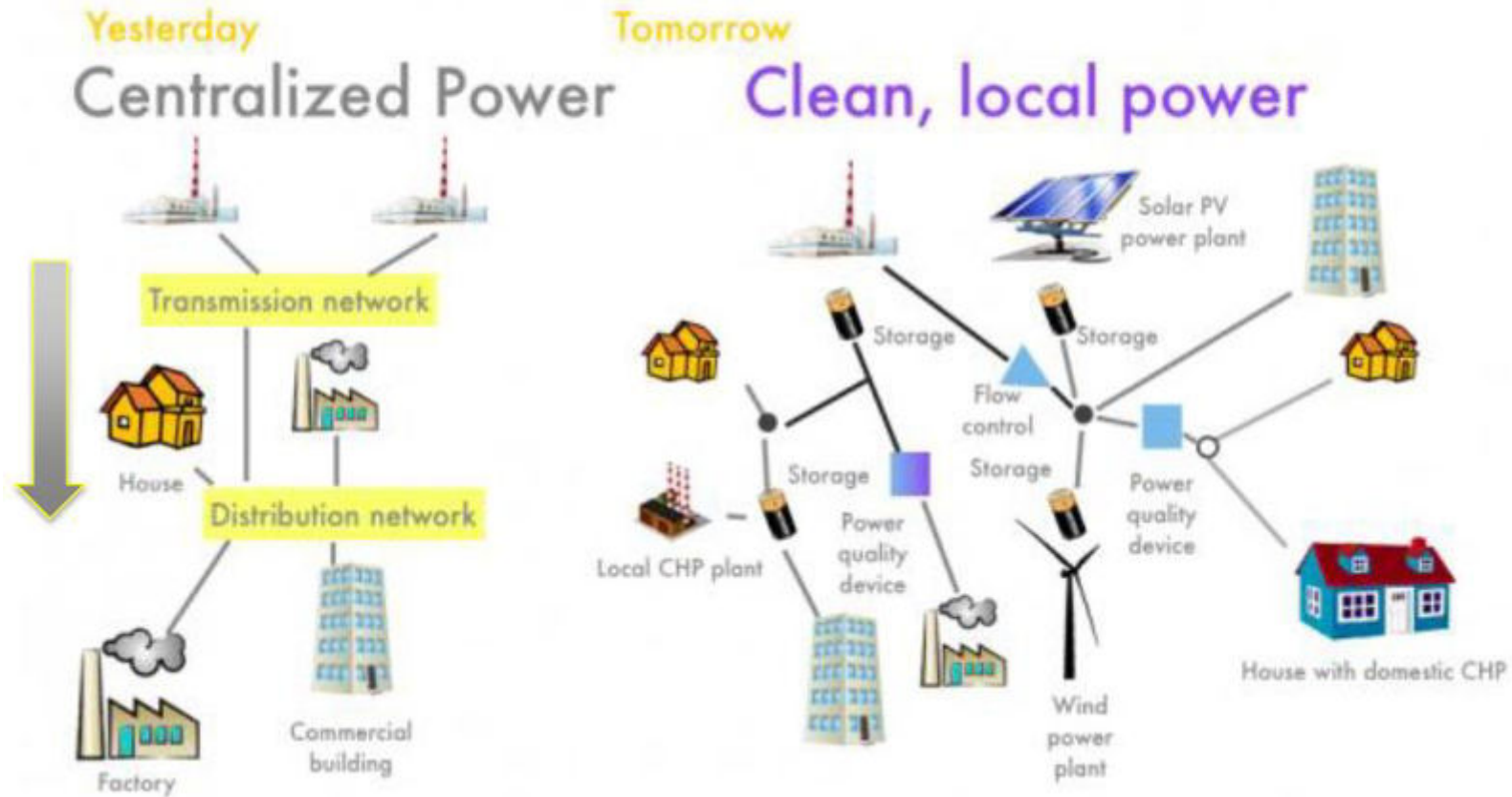


Vision: a fundamental transformation of Europe's energy system

- Current status: fossil fuel and nuclear based, national, central energy system with oligopolies
- Transformation to: renewable energy and energy efficiency as centre piece for a new stable, secure, affordable and democratic EU energy system
- Promotion of all renewable energy sources and technologies
- Decentralised energy system with multitude of independent power producers, energy cooperatives and communities, paired with large scale RES provider
- Energy efficiency
- Energy system approach:
 - Demand-side management > sector integration
 - Storage

Vision: a fundamental transformation of Europe's energy system

Decentralisation



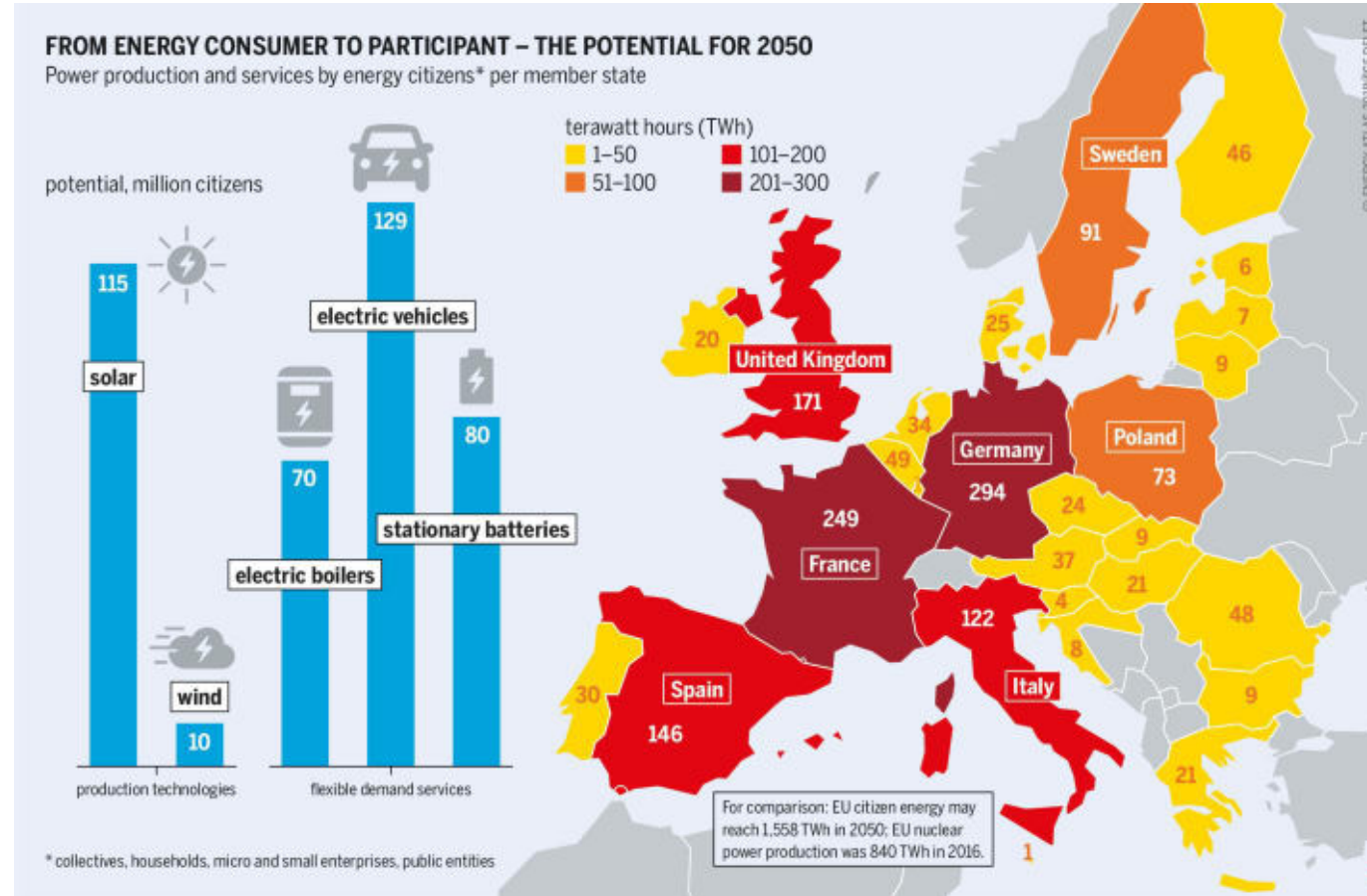
Selected benefits of the new sustainable European energy system

- **Economic benefits**
 - Local jobs and wealth creation as money for energy stays within region
 - Reduced energy poverty
 - Driver of technical innovation
 - Basis for a sustainable society
- **Political benefits**
 - EU energy system as true European project (promotion of the European idea)
 - Democratic energy system
- **Energy security**
 - Independence of import and transport of energy
 - Energy system approach (e.g. “energy clusters”)

An increased role for new players: energy citizens, energy communities and SMEs

- Renewable energy from citizens and energy communities as
 - Substantial contribution to national renewable energy targets
 - Additional capital for needed investments in renewables
- Empowerment of consumers (households, communities, SMEs)
 - Right to produce, use (self-consumption) and sell surplus energy
 - Minimum of bureaucracy and administrative burdens
 - Exemption from auctions and tenders

From energy consumer to participant



In 2050, "energy citizens" may produce twice as much power as today's nuclear power plants

Promotion of energy citizen - It all depends on the framework conditions



Country	Household Self-consumption PV	Common PV system Collective self-consumption	Independent households &SMEs Virtual self-consumption
Portugal	SC, MP	From January '20	From January '20
Spain	SC, PPA		Same cadastral reference / connected <500 m from the consumer
Lithuania	SC, NM, PPA	Allowed, PPA	Unclear porocedures
Poland	SC, NM	Long & unclear procedures	Long & unclear procedures
Greece	SC, NM	NM, VNM, VPN	NM, VNM, NPN
UK	SC	Single user PPAs well developed, but barriers for multi-user applications	VPN being piloted

YES
YES (with barriers)
NO

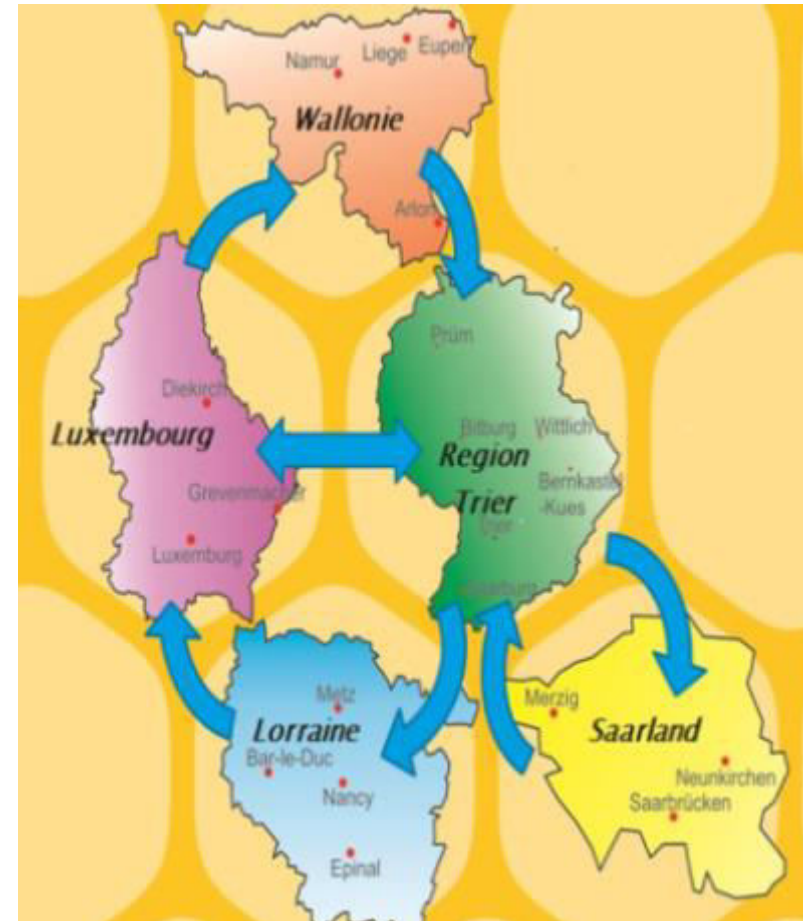
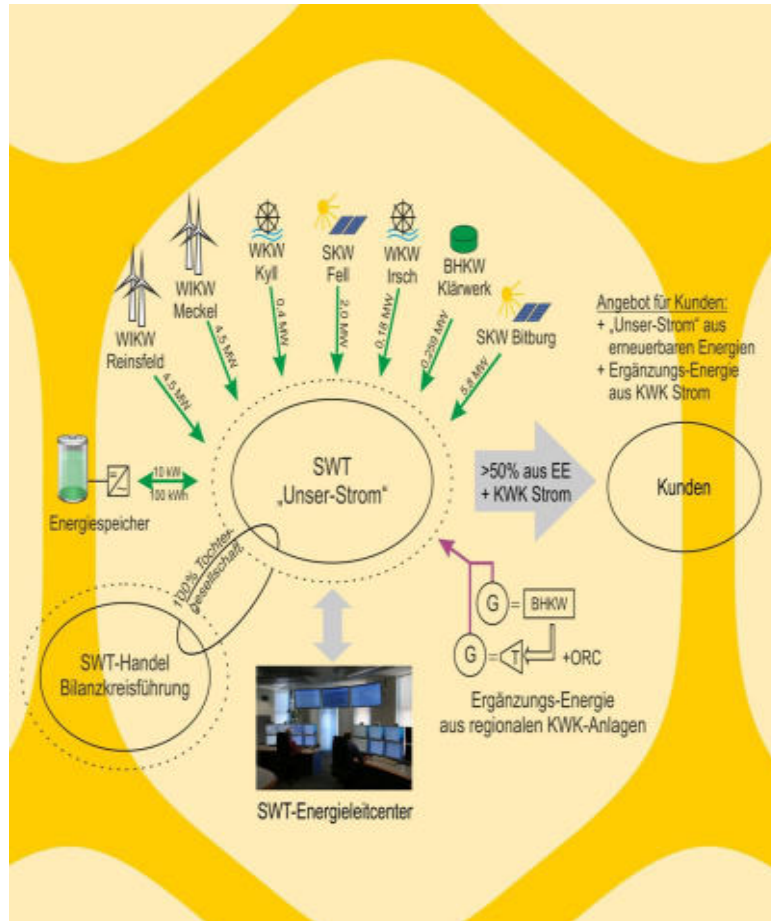
SC: Self-consumption
NM: Net-metering

PPA: Power purchase agreement
VPN: Virtual private network

FiT: Feed-in tariff
MP: market price

Source: PVP4Grid Project

Security of supply: Example energy clusters



Security of supply: Example hydropower

- Stabilisation of the overall energy system through the provision of system services
- Allows flexibility of the energy system (Study by *France Hydro Electricité* (November 2020))
- Reduction of the need for grid expansion in the distribution grid
 - Avoidance of additional grid expansion costs of around 750 million euros in the medium and low-voltage grid in Germany alone (Study of the *Bergische Universität Wuppertal*, July 2018)

Prerequisites for a cost-effective energy system transformation I

- **Structured phase out of coal, gas and nuclear capacities**
 - Just Transition: support for phase out and regional restructuring programmes
- **New energy market design with renewables and energy efficiency as centerpiece**
 - **National energy markets: still a non-level playing-field:**
 - Over- capacity from nuclear, gas and coal power stations and capacity markets
 - Continued subsidies for nuclear and fossils
 - Failed capacity markets designed to be rescue aid for old conventional power plants
 - No full internalization of externalities
 - No functioning ETS

Prerequisites for a cost-effective energy system transformation II

- **Strong political will and courage as well as dedicated long-term commitment to 2050 EU goal and international commitments**
- **Clear and reliable governance framework** for renewable deployment (investment security and confidence; promoting economy of scale and technical innovation)
 - No retroactive measures against existing renewable energy projects
 - Reduced administrative and financial burdens for renewables
- **Financing structure and tools**
 - Access to cheap capital
 - Public-private partnerships
 - Funding schemes for small and medium-sized RE projects (“Think Small” approach)
 - New support schemes to differentiate between large and small-scale projects

Thank you very much for your time.

Contacts:

Dörte Fouquet, Director
doerte.fouquet@eref-europe.org
+32 (0)2 204 44 10

Dirk Hendricks, Secretary General
dirk.hendricks@eref-europe.org
+32 (0)2 204 44 20

Office address:
Avenue Marnix 28, 1000 Brussels, Belgium

EREF: European Renewable Energies Federation

- Federation of national renewable energy associations from EU Member States, representing all sectors
- Objectives:
 - Promote the interests of independent power, fuel and heat production from renewable sources
 - advocate non-discriminatory access to the energy market
 - create, maintain and further develop stable and reliable framework conditions for renewable energy sources
- Advocacy work on European, international and national levels
- Information hub between national and EU levels