Municipalities and energy transition

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WECF e.V., Bündnis Bürgerenergie

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AGENDA

1. **WECF and Bündnis Bürgerenergie**
2. Recent development
3. Energy transition
4. Cooperation models
5. Summary
6. Useful links

WECF – International Network

Our topics

- Gender and sustainable development
- Social and gender just energy- and water supply and circular economies
- Healthy environment for women and men

Our methology

- Capacity building, analysis, pilots
- Policy und Advocacy, Monitoring of political processes
- Awareness raising, networking, campaigns, publications, outreach

Our approach

- Holistic and intersectional
- Target group oriented

Our target groups

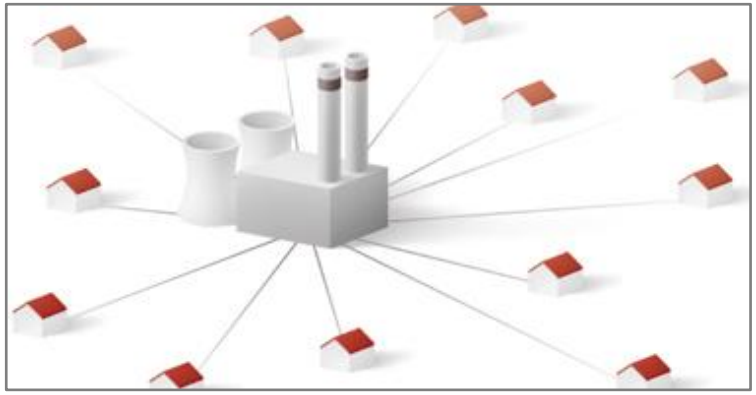
- National and internationa public & CSOs
- Local, national and international policy and authorities

Bündnis Bürgerenergie

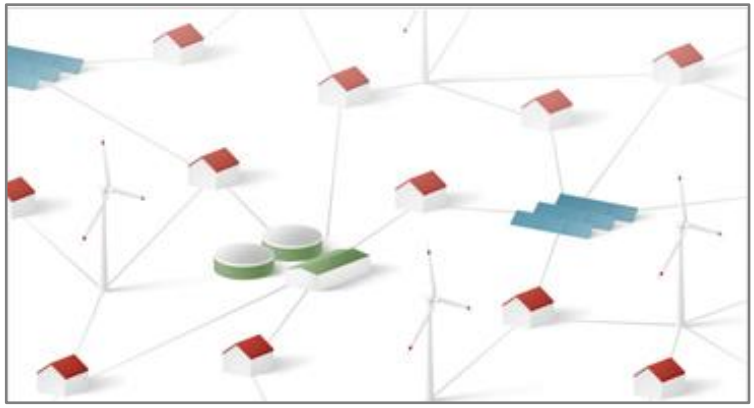
German association with more than 200 members

- Decentralized energy transition based on energy communities: electricity, heat, mobility, efficiency, cooperation
- Representing political interests of German citizens energy actors in Berlin, Brussels, etc.
- **Vision: decentralized energy market**

Centralised: Few central actors (monopolistic power companies, grid → operator, regulator, central marketplace) control the system.



De-centralised: Focus on the consumer → Priority for decentralised generated renewable electricity that finds its regional consumer.



Recent and development

Based on scientific results, experiences and lack of political action

- #Climatestrike: Fridays, Parents, Scientists, Entrepreneurs, Artists, etc. for Future
- Extinction rebellion
- Climate emergencies on municipial level
- EU elections with clear climate protection focus
- 2015- 2018 the warmest years in Germany since climate recording

Energy transition

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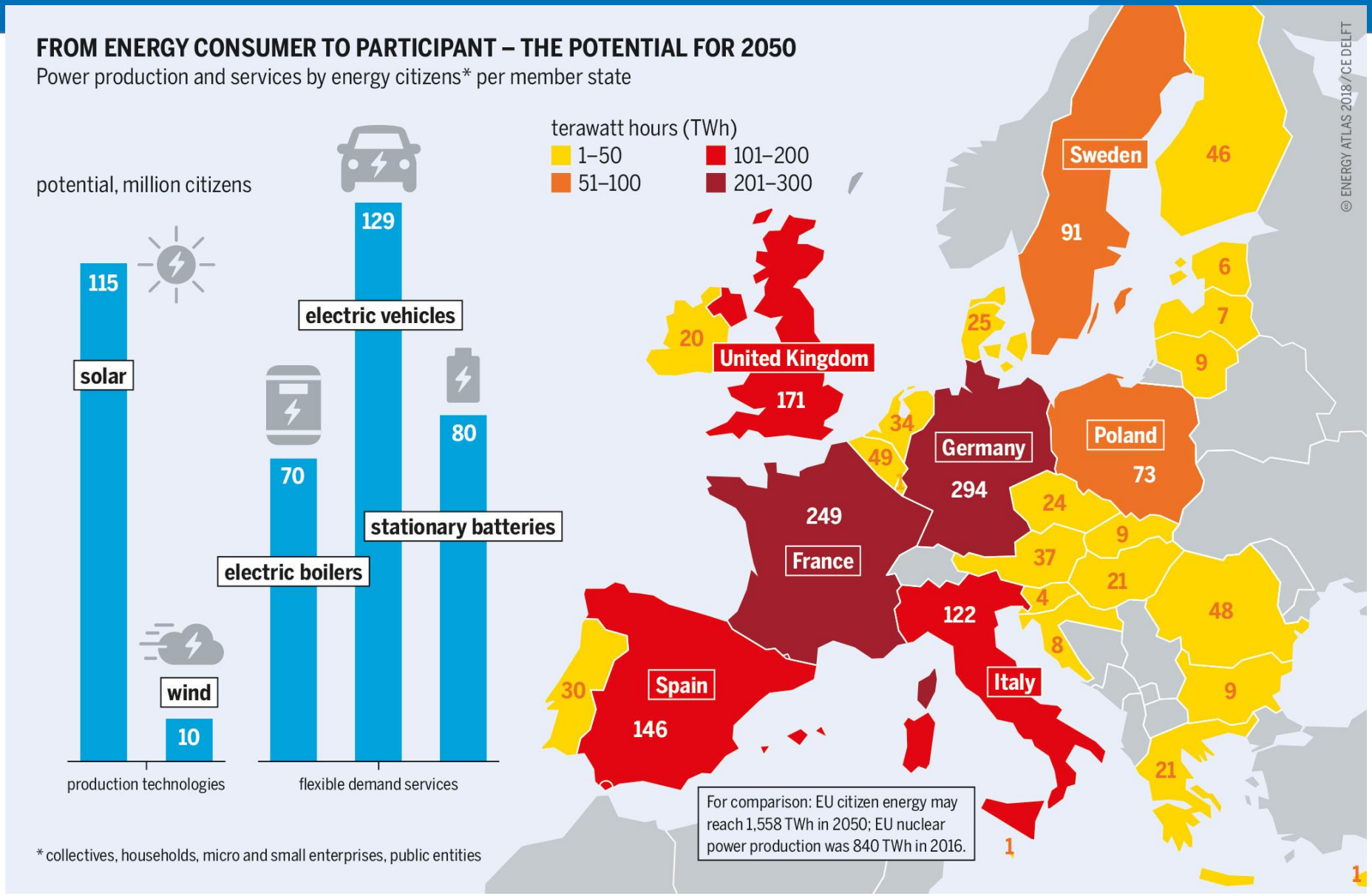
Energy Transition in Europe



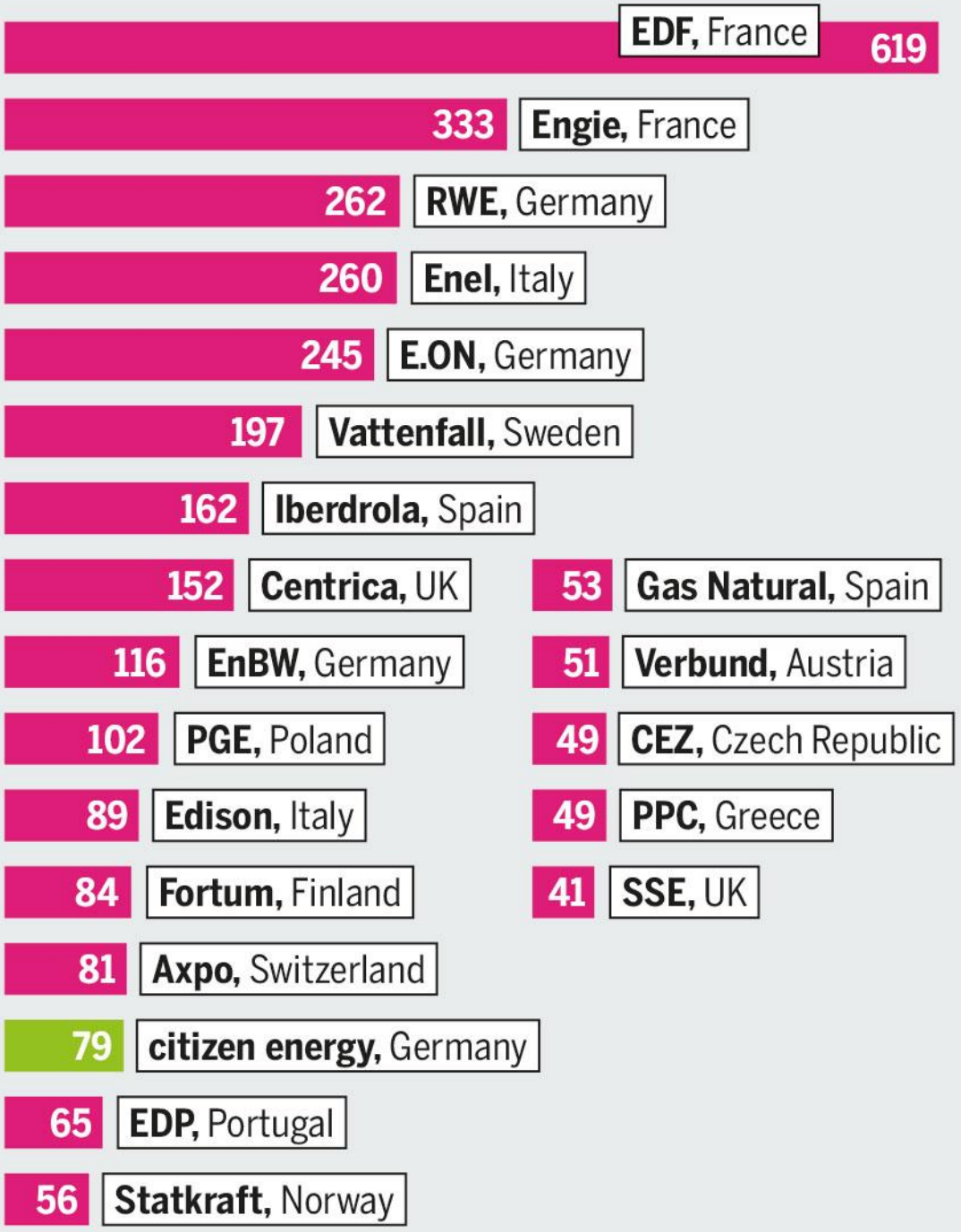

- Give up fossil fuels by 2050
- 100% Renewable Energy: power, mobility and heating, cooling – with storage and demand response
- Strong interconnections of markets and infrastructure
- Increasing energy efficiency
- System change: from centralized, monopolistic to decentralized community power
- **Driven by citizens, cities and energy cooperatives, more wealth in communities**
- Cutting dependency on fossils and unstable governments
- Socially just transition
- Energy communities are tackling energy poverty
- EU neighbourhood policy inspires and supports other countries to decarbonize

Potential of Citizen‘s Energy



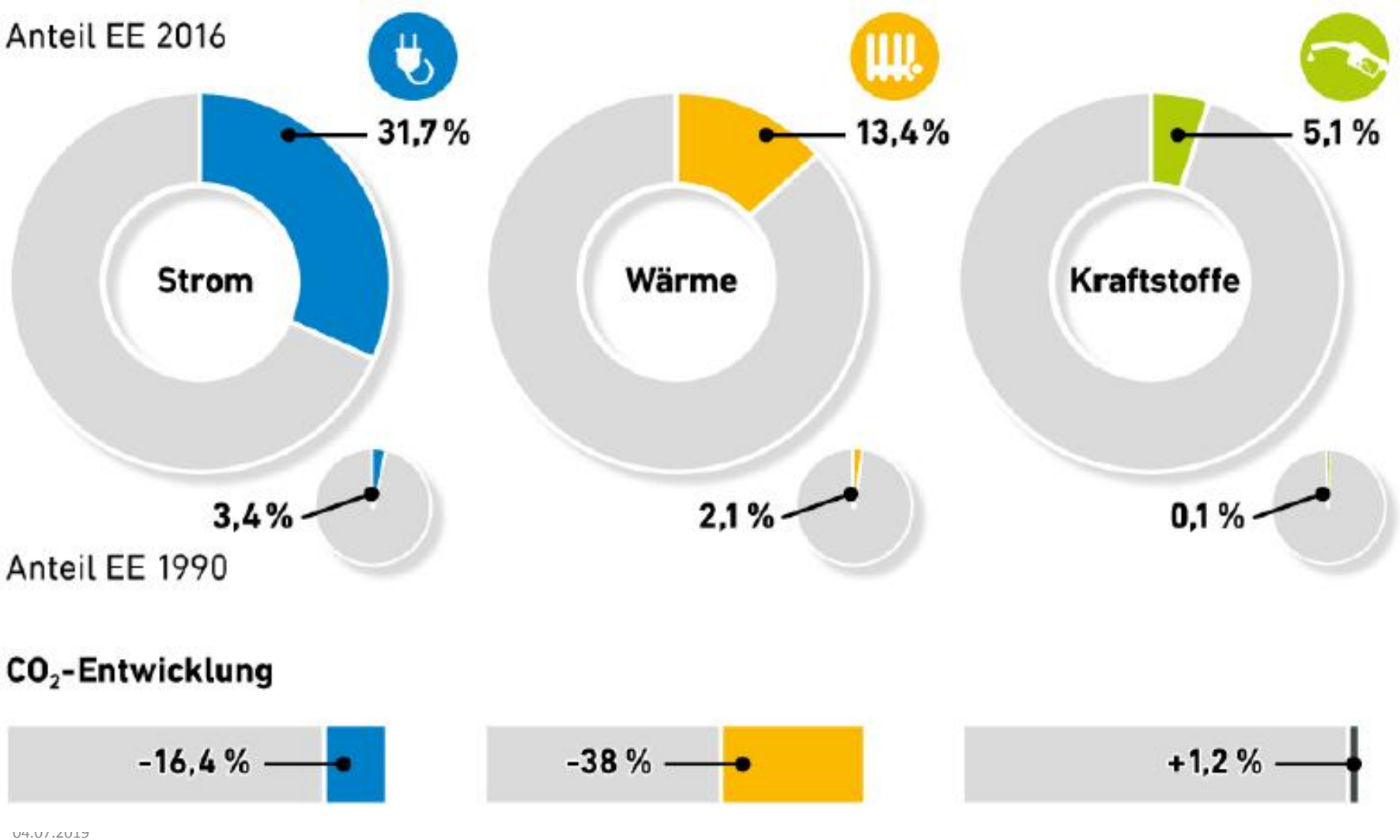
Europe‘s Largest Energy Retailers

Sales in TWh, 2016



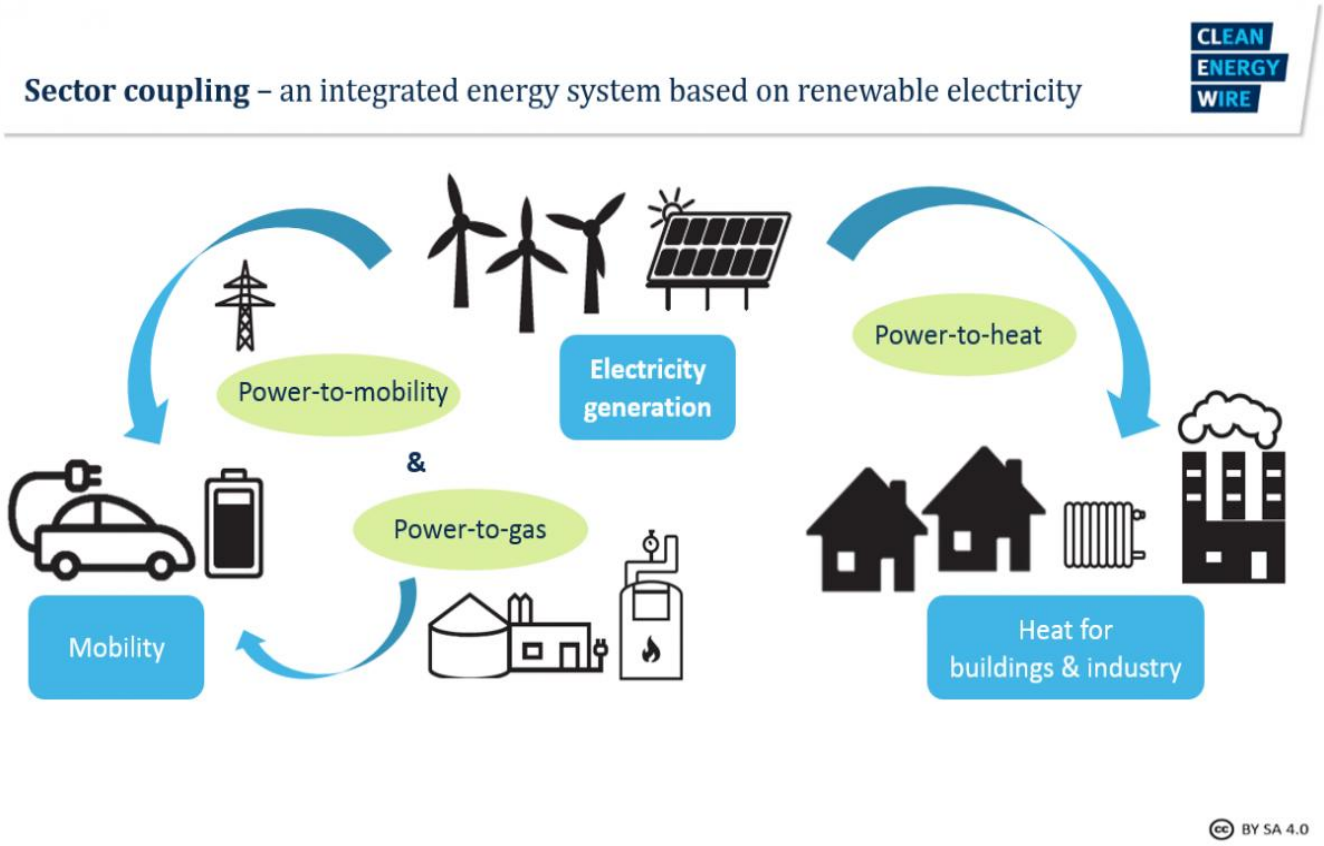
ENERGY ATLAS 2018 / PROSPEX, UBA, AEE

Energy Production per Sector in Germany 2016
Only for power dynamic development



Sector Coupling – Power to X with Storage solutions Great Potential for Municipalities

- Power sector, heating, cooling, transport to be replaced with RE
- **Power**: growing, low cost, foreseeable
- **Heating**: Replacing oil and gas-fired heating with solar thermal and electric systems powered by RE
- **Transport**: electric mobility by RE.



Cooperation models

1. WECF and Bündnis Bürgerenergie
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4. **Cooperation models with municipalities**
5. Summary
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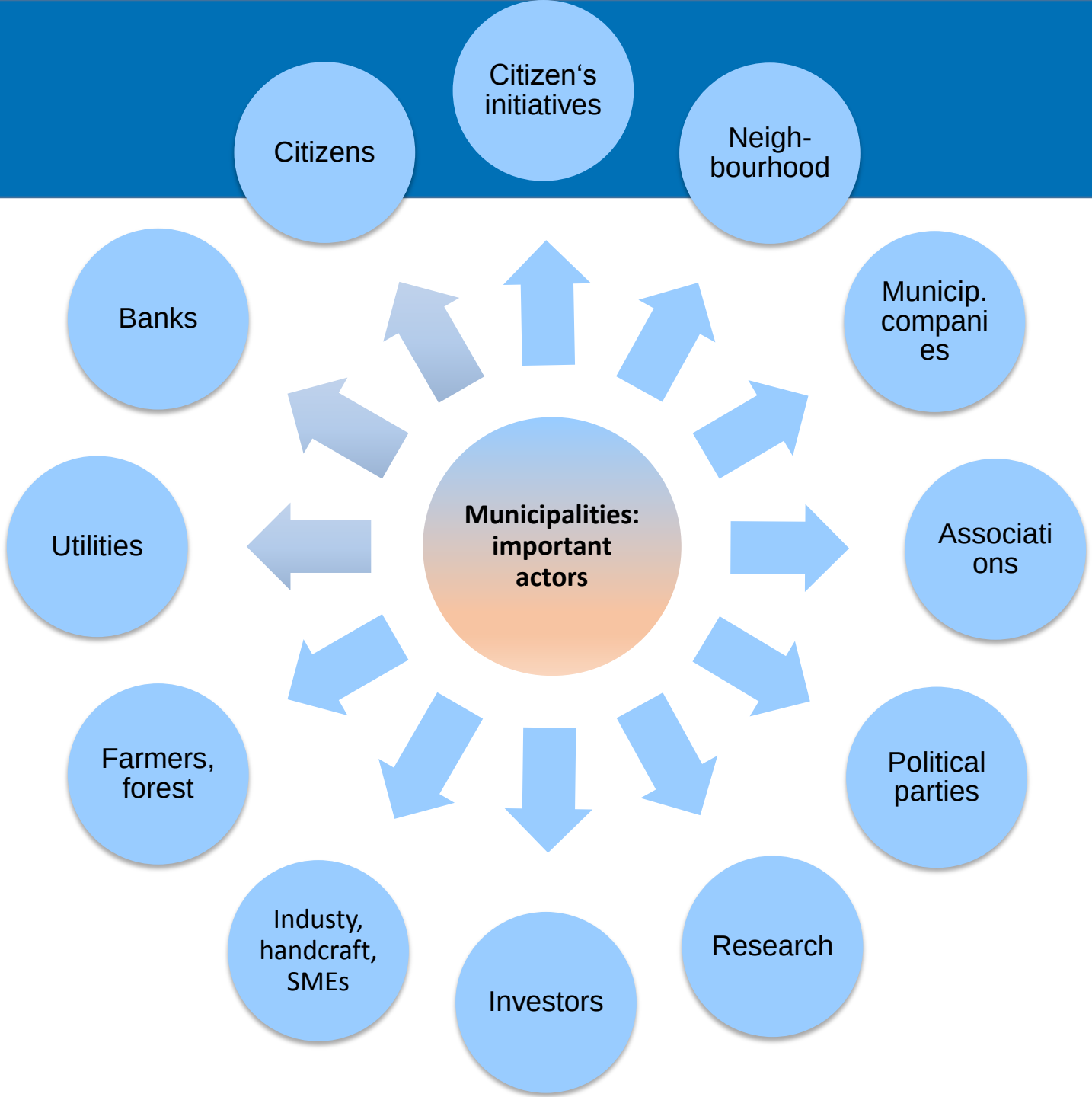
Municipality is …

- … consumer and role model
- … planning and regulation body
- … utility and providing services
- … consultant and promotor
- … pioneer for sector coupling (district solution)

- “Energy municipalities" make innovative use of increasing renewable energies
- Broad partnership can achieve great things
- Benefitting from value-added effects
- Increasing acceptance and participation of citizens


Citizen‘s initiatives
Citizens
Neigh-bourhood
Banks
Municip. companies
Utilities
Municipalities: important actors
Associations
Farmers, forest
Political parties
Industy, handcraft, SMEs
Investors
Research

Municipality as consumer and role model

Rehfelde, 4.800 inhabitants

- Municipality is shareholder at local energy cooperative
- One Share of energy cooperative: 250€
- Socially sound energy for region
- Energy group legitimated by city council, regular meeting
- Municipial energy concept, long-term „power to gas“ and bioagas powerplants
- Target: stable, affordable and renewable self supply for power and heat

Municipality as planning and regulation body

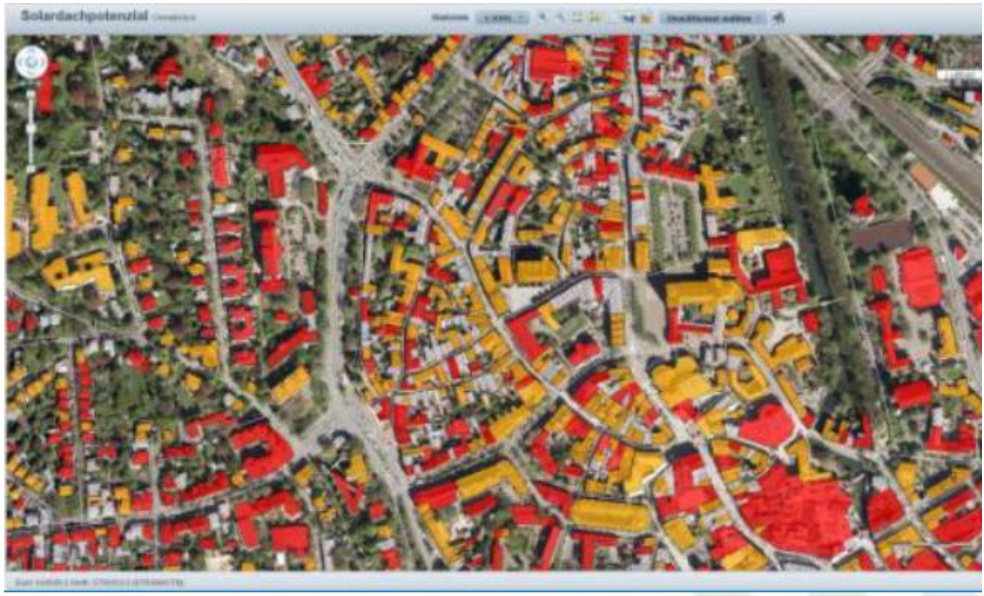
Tübingen, 88.000 inhabitants

- Municipial planning law: obligatory PV or solar thermal for new buildings
- Minimum energy efficiency standard
- Retrofitting with renewable power and heat
- Consulting, grant programs and funding for climate activities

Municipality as consultant and promotor

Osnabrück, 164.000 inhabitants

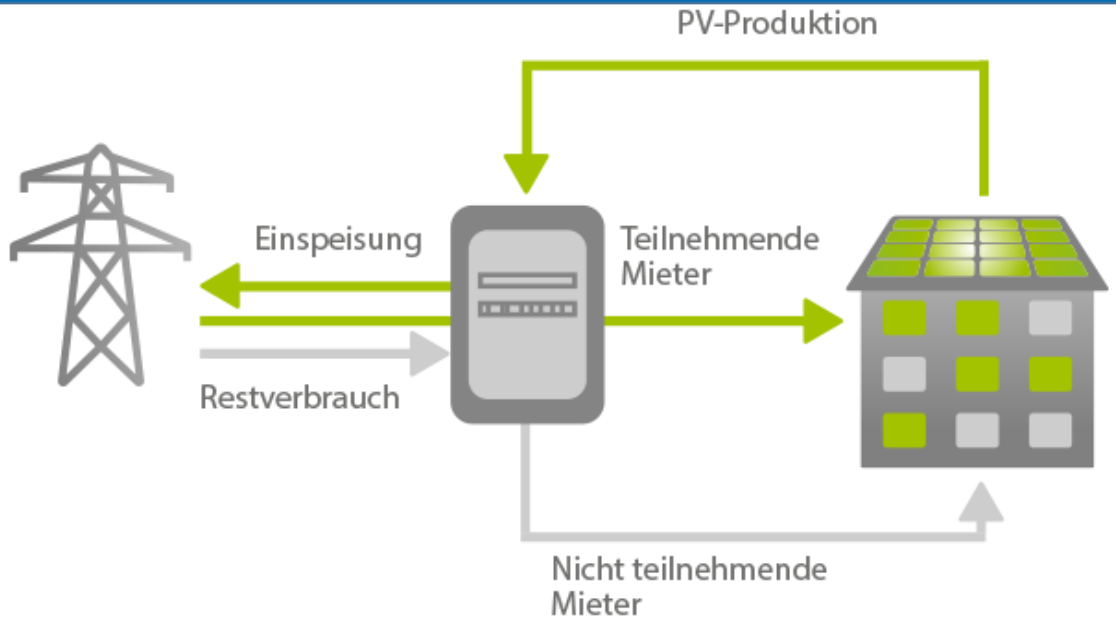
- Solar cadaster with potential and economic calculations
- Utility Osnabrück offers „all inclusive package“ for building owners
- Installation and operation for cadaster for all municipalities



https://geo.osnabrueck.de/solar

www.swo.de/solarkomplett

Municipality as partner for tenant model



Energy from own production

Energy from grid

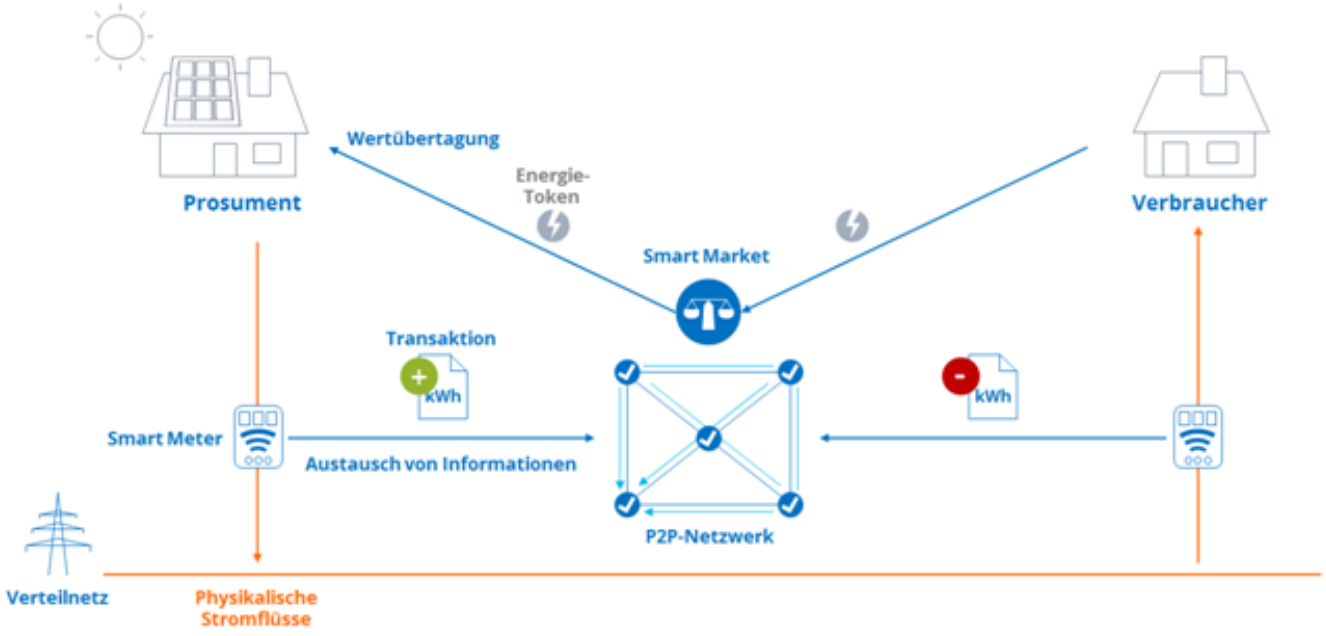
Munich, 1.5mio inhabitants

- Usage of locally produced energy
- Reduced costs
- Independent of power price development
- Climate protection
- All citizens participate – not only building owners

Municipality as partner for Peer-to-peer trading

Kempten: 70.000 inhabitants

- Prosumer: EU Renewable energy directive – decentralized power plants, direct consumption, trading, less costs for small plants
- Utility Älllgäuer Überlandwerk and energy cooperatives



Quelle: Studienarbeit Eichermüller, J. (2018) , Handlungsfelder für Energiegenossenschaften abseits des EEG, Hochschule für Forstwirtschaft Rottenburg

LED contracting for municpalities

Starnberg, 24.000 participants

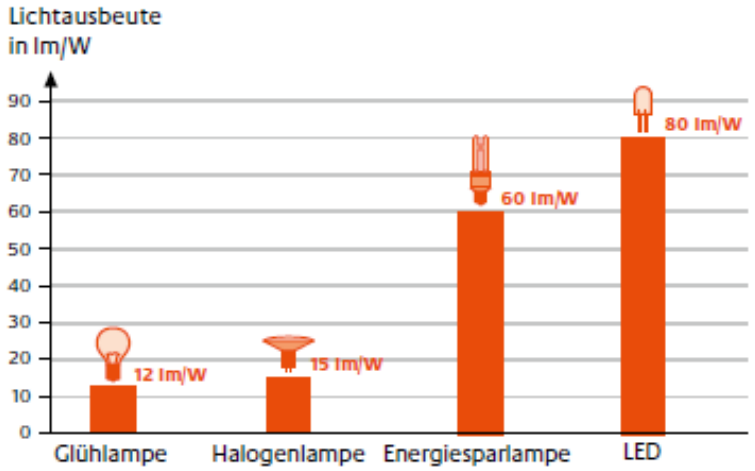
- Installation of efficient LED lighting in public buildings
- Economic and ecologic advantages for municipality
- Energy cooperative plans and funds the installations
- 2015: Replacement of 598 old fluorescent tubes with LED (schools, hospitals)
- Municipality saves p.a. 10.000€, no investment costs
- Cooperative is contractor partner, 5 years, gets 6.500€ p.a.
- Municipality saves for 5 years p.a. 3.500€, after 5 years into municipial ownership

Challenge:

- Municipality has little experience, lot of awareness raising needed

Success factors

- New, long lasting lighting, positive results for municipality, no investments



Quelle: Studienarbeit Eichermüller, J. (2018) , Handlungsfelder für Energiegenossenschafte

Municipalities and counties as partner
County Steinfurt and association energieland2050 e.V.

Steinfurt, 450.000 inhabitants

- Energieland2050 is embedded in county administration
- Pool of representatives of policitians, economy, science, civil society and 24 municipalities
- Target: Energy idependency by 2050!
- Service partner for citizens, municipalities and companies for
  - Energy efficiency and retrofitting
  - PV, solar thermal, geothermal
  - Electromobility and infrastructure
  - Sustainable way of life: plastic free, fair trade, etc.

Climate emergency in German cities
Konstanz, Kiel, Osnabrück, Erlangen, …

Call for climate protection

- Cero emissions by 2035
- Coal phase out till 2030
- 100% Renewable Energy by 2035

End of 2019

- Stop subsidizing fossil fuels
- Phase out for 25% of coal power plants
- CO2-tax: 180€/ton (UBA)

Summary

No municipality is like the other: no „One Size fits All“.

- Municipial energy concept
- Enthusiasm for projects
- Contribution to common good
- Intermunicipial cooperation with various stakeholders
- Involving local utility companies and SMEs
- Local value chain: production, storage, transport, installation, consumption, digitalisation, sector coupling

Potential is everywhere

Useful links

- www.kommunal-erneuerbar.de
- German Federal Ministry for Economy and Energy
- https://geo.osnabrueck.de/solar
- www.swo.de/solarkomplett
- https://www.bmwi.de/Redaktion/EN/Dossier/renewable-energy.html
- Renewable Energy Agency Platform:
- http://www.unendlich-viel-energie.de/en/homepage.html
- Live information on the electricity market
- https://www.smard.de/home
- Bavarian Energy Agency: http://www.energie-innovativ.de/
- www.irena.org
- https://www.ises.org/what-we-do/dispelling-myths

Thank you for your attention

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Back up slides
No translation needed




- In Europe, a full transition to 100% RE – power, heat, transport - is feasible
- Existing RE potential and technologies, storage, can generate sufficient and secure energy supply at every hour throughout the year.
- The sustainable energy system would be more cost effective than the existing fossil and nuclear system
- Main energy supply: **solar 62%** and **wind 32%**
- Energy transition: not a question of technical feasibility or economic viability, but one **of political will**.

Primary energy demand and electricity generation

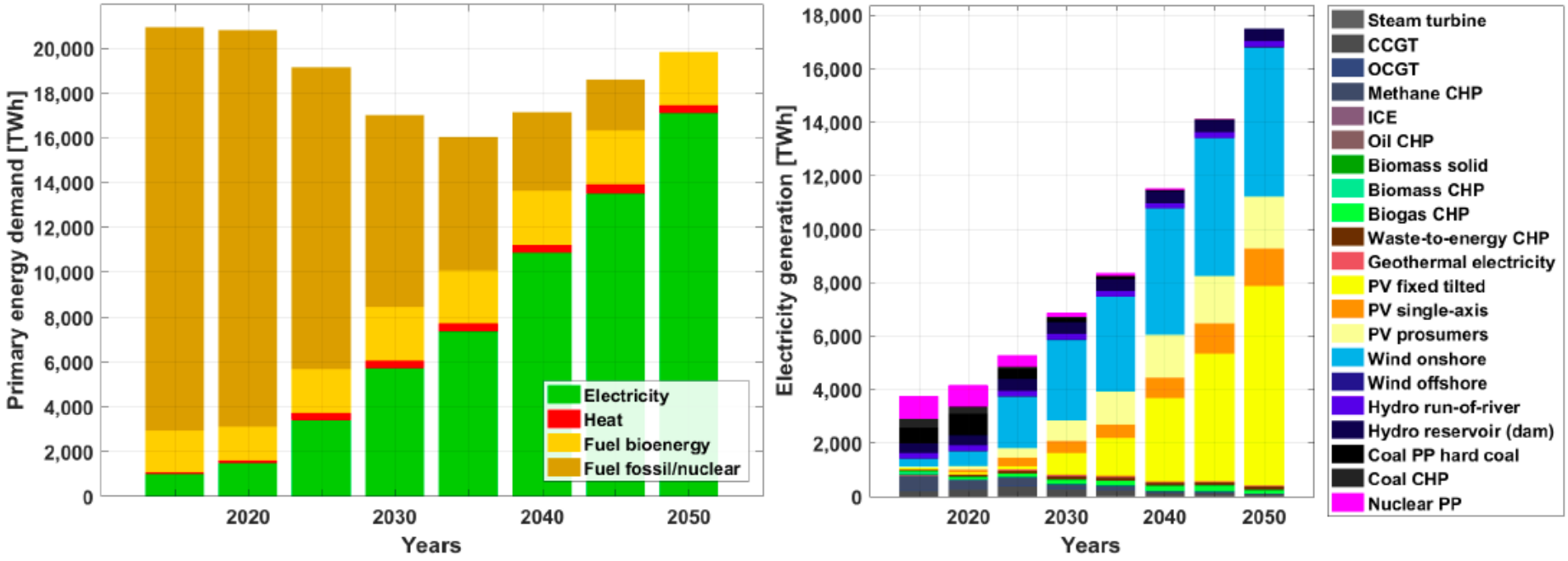
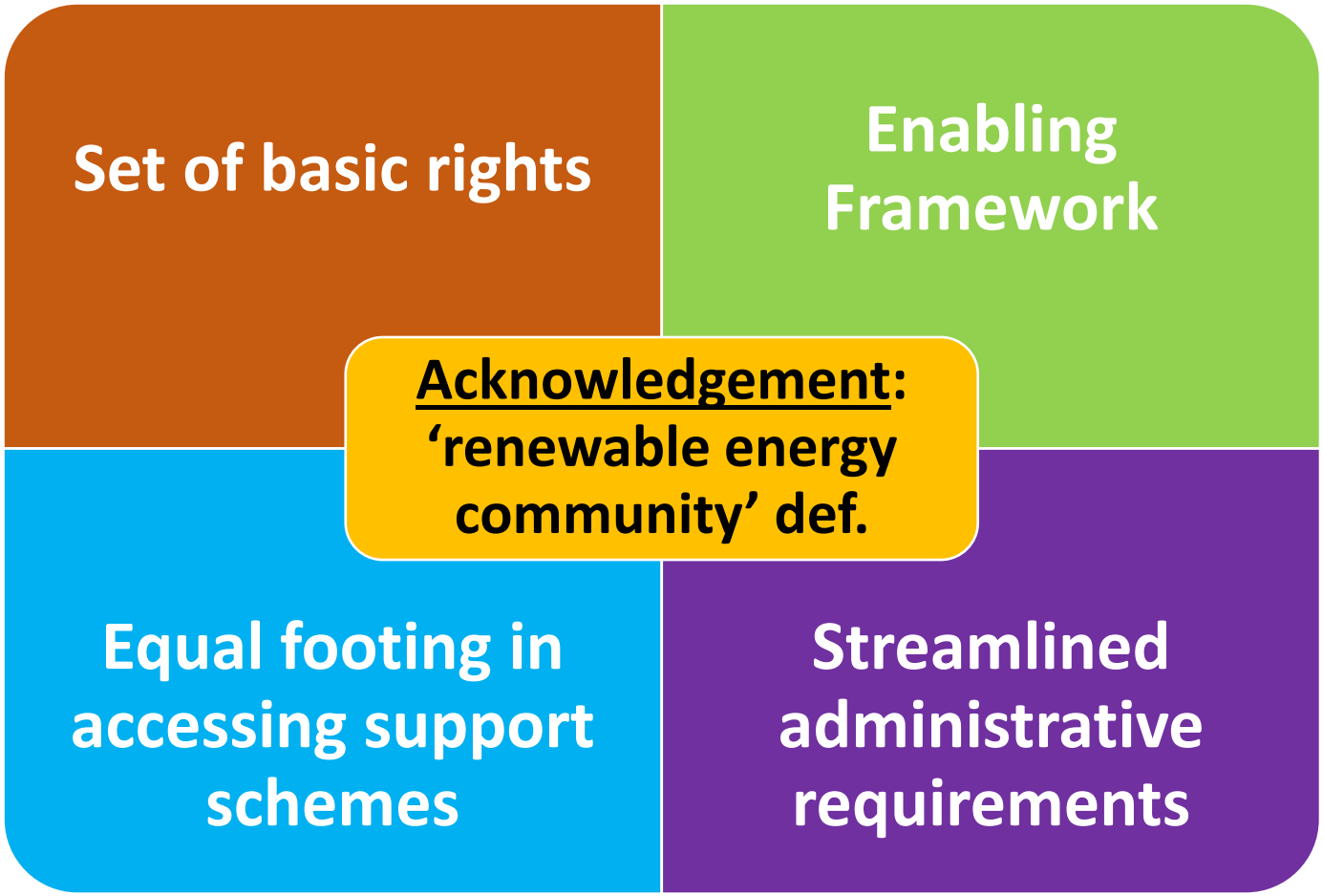


Figure KF-1: Primary energy demand (left) and electricity generation from various power technologies (right) through

Key features of German‘s energy sector (1)

- **High Greenhouse Gas Emissions:**
  9,0 t CO_{2equ} /p/a in 2017
- **High dependency on fossil energy sources**
- **High dependency on energy imports (2013):**
  uranium: 100% crude oil: 98% natural gas: 85% coal: 72%
- **Liberalisation of power markets:** Separation of generation, distribution and sale, free contracting: 900 utilities, but 4 big energy companies
- **High electricity prices:** 0,29 €/kWh (2019) for private consumers and small Enterprise
- **Almost 100% connectedness** to the public (European) grid

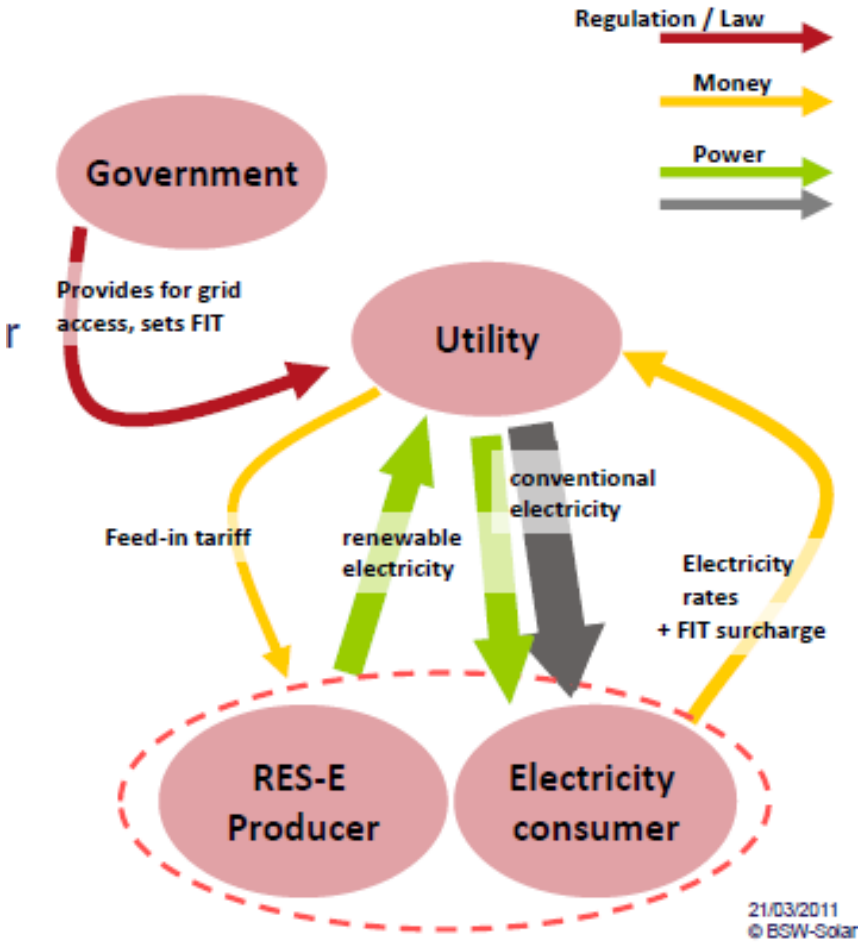
Renewable energy directive RED: policy foundation for energy citizens in Europe



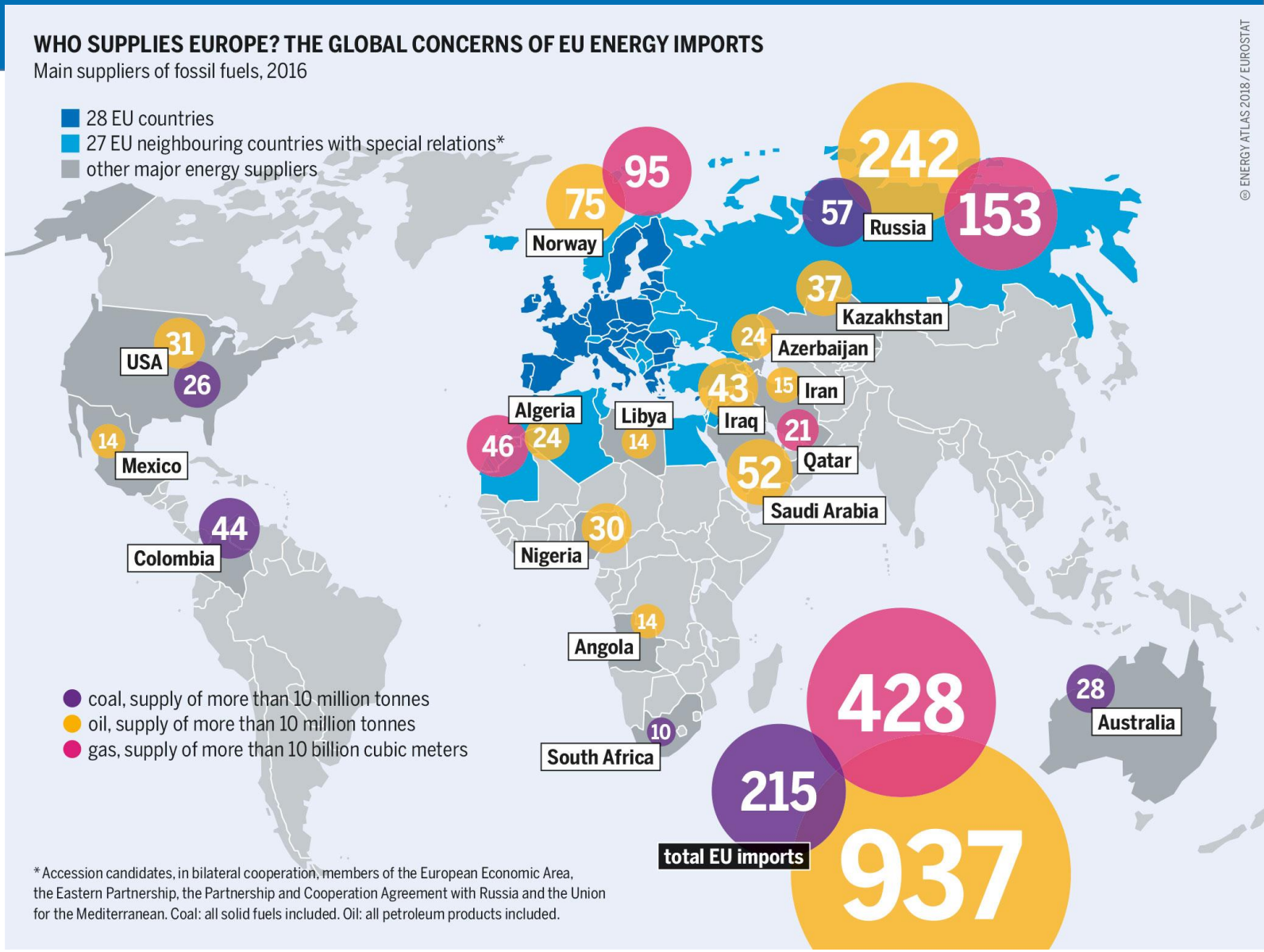
Examples: EEG - Basic mechanism

- Obligatory grid connection and selling of produced energy
- Fixed feed-in tariffs (FIT) per KWh for 20y
- Tariff degression

  Privileged sources: hydropower, PV, wind (onshore – offshore), biomass, biogas, geothermal
- Additional costs caused by guaranteed FIT to be paid by final consumers
- Since 2012: Incentives for direct marketing



Who supplies Europe?



12 BRIEF LESSONS

ON EUROPE'S ENERGY TRANSITION

1 Energy has historically been a key driver of European **COOPERATION**. But current EU proposals are not enough. To comply with the Paris Climate Agreement, we **MUST GIVE UP** fossil fuels altogether by 2050.

2 A **100 %** renewable energy system in Europe is now technically possible using existing **STORAGE** and **DEMAND RESPONSE** technologies.

3 Stronger **INTERCONNECTIONS** of markets and infrastructure across Europe will make the energy transition cheaper for all Europeans.

4 The biggest potential lies in **INCREASING EFFICIENCY**. Europe-wide we could reduce our energy demand by half by 2050.

5 A switch to 100% renewables in Europe will trigger **SYSTEM CHANGE** – away from centralized, monopolistic utilities to decentralized, community power projects and innovative business models.

6 Framed by smart strategies and legislation, this system change can be driven by **CITIZENS, CITIES AND ENERGY COOPERATIVES**, leaving much more wealth in communities.

7 Digitalization can make this transformation more **DEMOCRATIC AND EFFICIENT**, and can reduce the bill for the end consumer.

8 The European energy transition pro to increase **PROSPERITY** in a sustaina way (creating more local jobs) and b global **LEADERSHIP** in green innovat

9 Since 2013, renewables have helped **SLASH** Europe's import bill for fossil fuels by more than a third, **CUTTING ITS DEPENDENC** on unstable and unpleasant regimes.

10 **A SOCIALLY JUST TRANSITION** is both essential and viable: all over Europe, the renewables sector already provides more well-paid, secure local jobs than the coal industry.

11 **ENERGY POVERTY** is being tackled by pioneering community power proje acting in solidarity with those in the community addressing this challeng

12 Europe's Neighbourhood Policy should **INSPIRE AND SUPPORT** other countries to decarbonize their economies. A socially just energy transition in Europe's neighbouring regions can stimulate their progress and stability.