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FACHAGENTUR NACHWACHSENDE ROHSTOFFE E. V.
AGENCY FOR RENEWABLE RESOURCES

Source: FNR/Dr.Peters

Diego Piedra-Garcia
11.03.2020
Rostock

Federal Ministry
of Food
and Agriculture

FNR
Fachagentur Nachwachsende Rohstoffe e.V.

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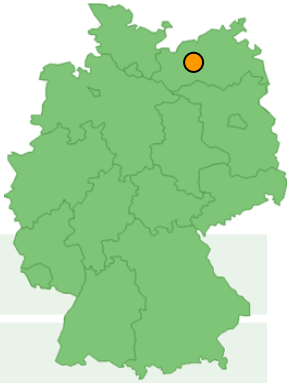


Facts

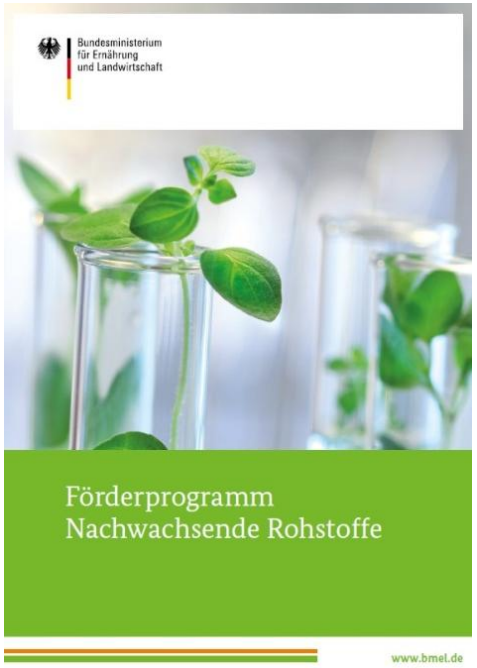
Foundation:	October 1993
Main office:	18276 Gülzow-Prüzen
Support:	Federal Ministry of Food and Agriculture (BMEL) and the State of Mecklenburg- Western Pomerania
Employees:	111
Legal status:	Registered association with 85 members (seven voting members)
Tasks:	• Promotion of research, development and demonstration (project management) • Information & advice • Public relations • International and EU activities
Target groups:	Industry, SME, public and private research institutes, universities, government agencies

current state: 02.01.2020

Tasks of the FNR

Promotion of research, development and demonstration (1)

- Obtainment of commodity crops from agriculture, forestry and aquatic biomass
- Attending to biogenic waste from agriculture and forestry, aquaculture, the processing industry, commerce and households
- The generation, handling, processing and use of renewable resources
- The resource-efficient and environmentally friendly production of bio-based products and bioenergy sources
- Coping with cross-cutting issues, including creating a dialogue with the civil society



Tasks of the FNR

Promotion of research, development and demonstration (2)

- Adapting forests to climate change
- Preserving and expanding the CO_2reduction potential of forest and wood

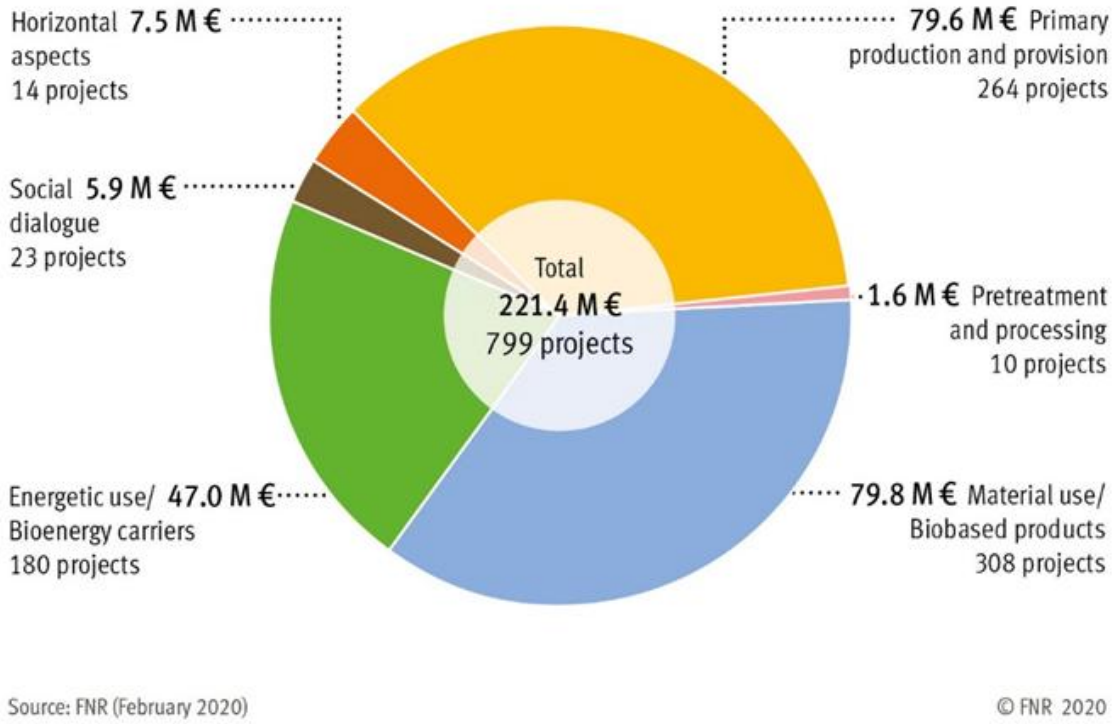
Waldklimafonds

Tasks of the FNR

Promotion of research, development and demonstration (3)

	Support since 1993	Support to ongoing projects
Amount	1,011.7 M €	221.4 M €
Projects	3,870	799


Source: FNR/Lulies



Tasks of FNR

Information & advice, public relations

- several contests of Federal Ministry of Food and Agriculture
- www.fnr.de : 40 different websites
- media channels (Twitter- and Youtube)
- Active press work
- ca. 30 events p. a.
- ca. 30 trade fairs/exhibitions p. a.
- ca. 40 publications p. a.
- Expert information
  - Bioenergy
  - Biobased products and procurement (product database)

Tasks of the FNR

European & international activities


Sourc: nyul - Fotolia

FNR remains as a competent partner in terms of renewable resources on both the European and international levels, and carries out all activities on behalf of the Federal Ministry of Food and Agriculture

- Analysis of political developments and framework conditions in the European Union
- Information and advice about European funding opportunities for German applicants
- Development of EU projects
- Coordinator/partner of around 15 ongoing EU projects
  - Networks related to bioenergy and bioproducts
  - ERA-NET projects (European research coordination, joint funding from EU and national programmes)
- Member of international and EU expert panels
  - EU-expert panels (e.g. bioeconomy, bioenergy): SCAR SWG/CWG, SET-Plan
  - IEA Technology Cooperation Programmes: IEA Bioenergy und IEA Advanced Motor Fuels (AMF)
  - Sustainability of bioenergy: Global Bioenergy Partnership (GBEP)

Unlocking the potential of Biobased value chains

Bioenergy business enterprises

Diego Piedra-Garcia, FNR
Workshop, Rostock

Rostock, 11 March 2020

Economic and social drivers for optimal bioenergy use

- **Status:**
- Do you know the EU28 target of renewable energy share by the end of 2020?

A. 10% of energy from renewable resources by the end of 2020
B. 20% of energy from renewable resources by the end of 2020
C. 30% of energy from renewable resources by the end of 2020

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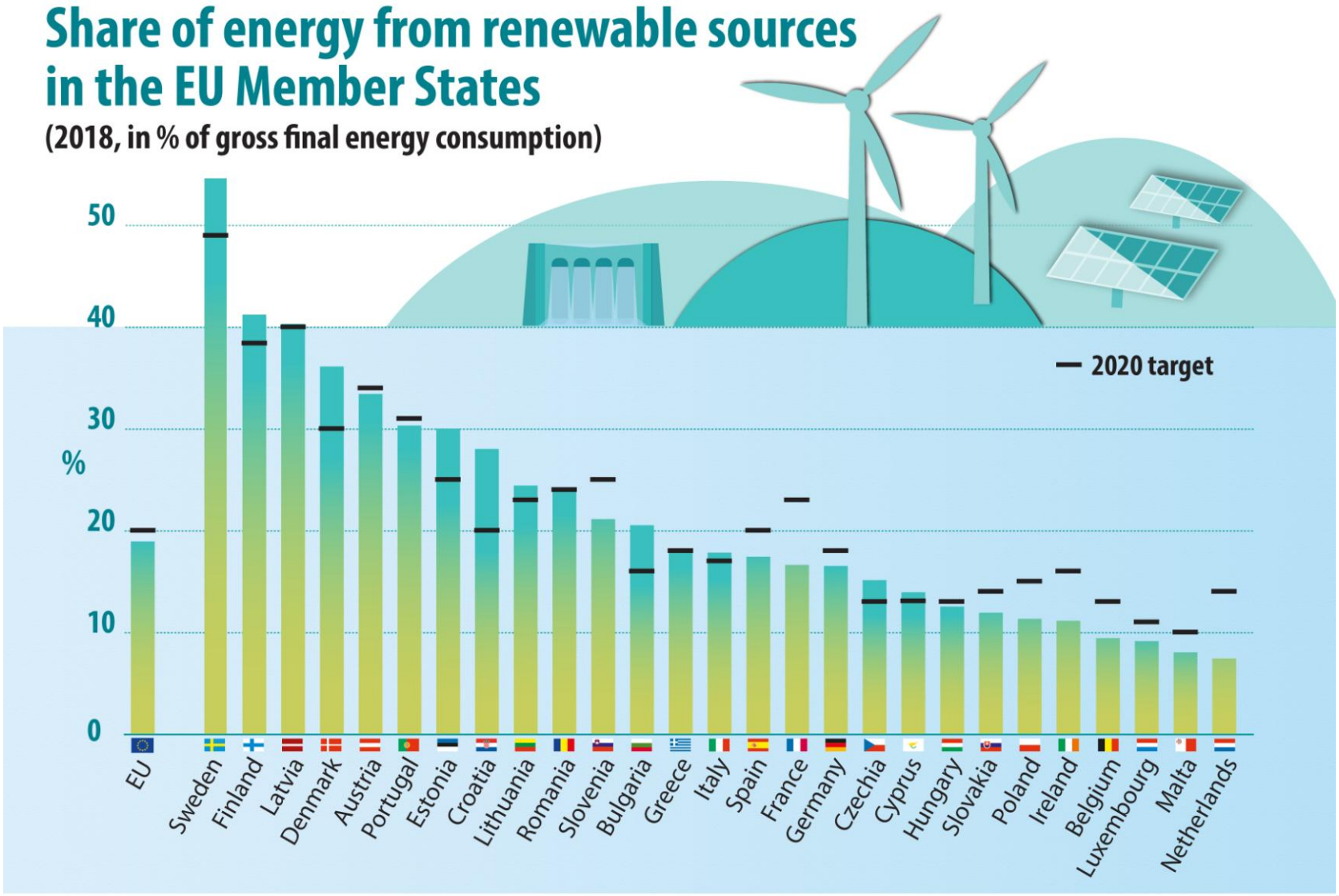

Source: Eurostat (nrg_ind_ren) last access 02.03.2020
https://ec.europa.eu/eurostat/documents/2995521/10335438/8-23012020-AP-EN.pdf/292cf2e5-8870-4525-7ad7-188864ba0c29

Economic and social drivers for optimal bioenergy use

- **Status:**
- Do you know the share of German renewable electricity production in 2018?

A. 17,9% was produced in 2018
B. 21,8% was produced in 2018
C. 37,8% was produced in 2018

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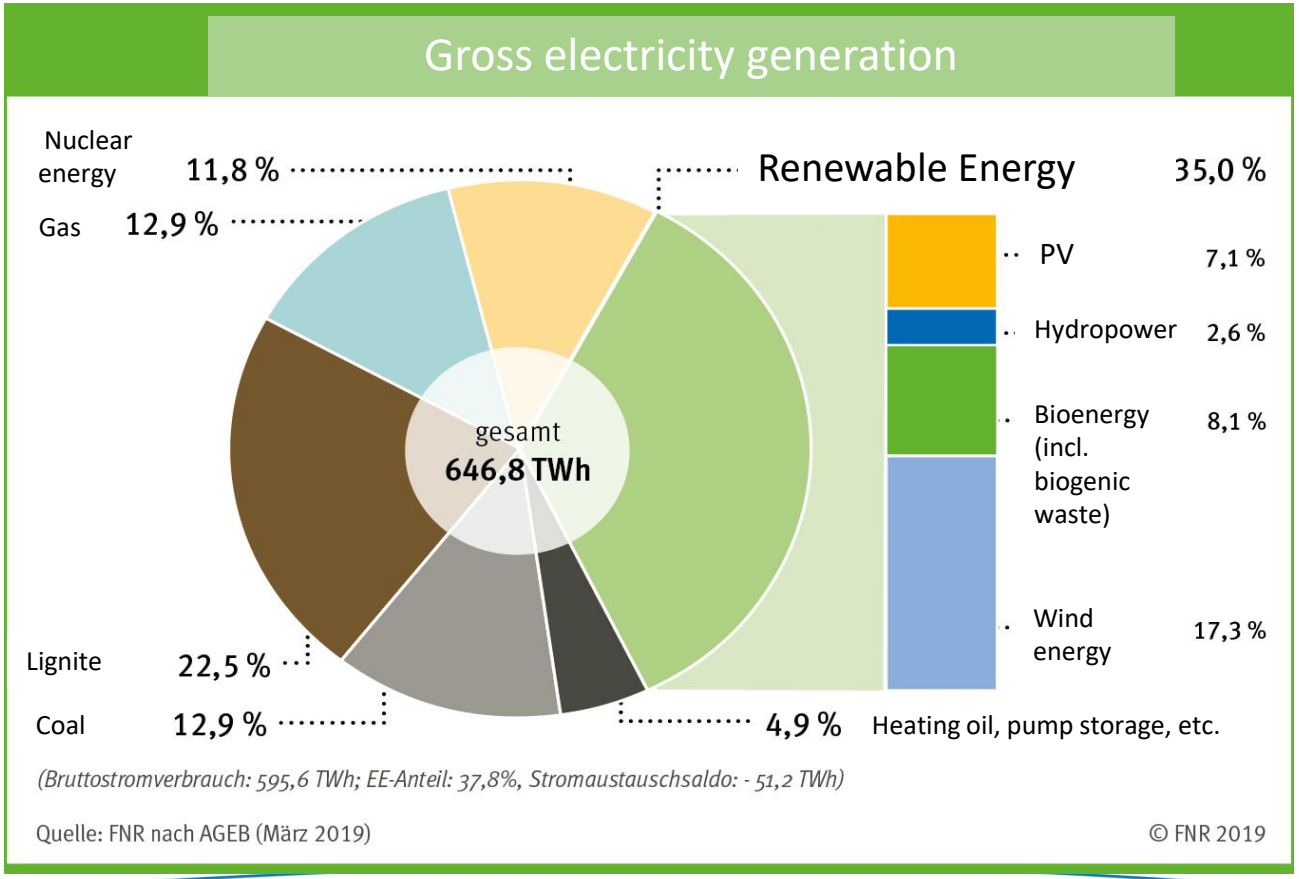
- **Status:**
- 37,8% of the total German electricity generation is renewable



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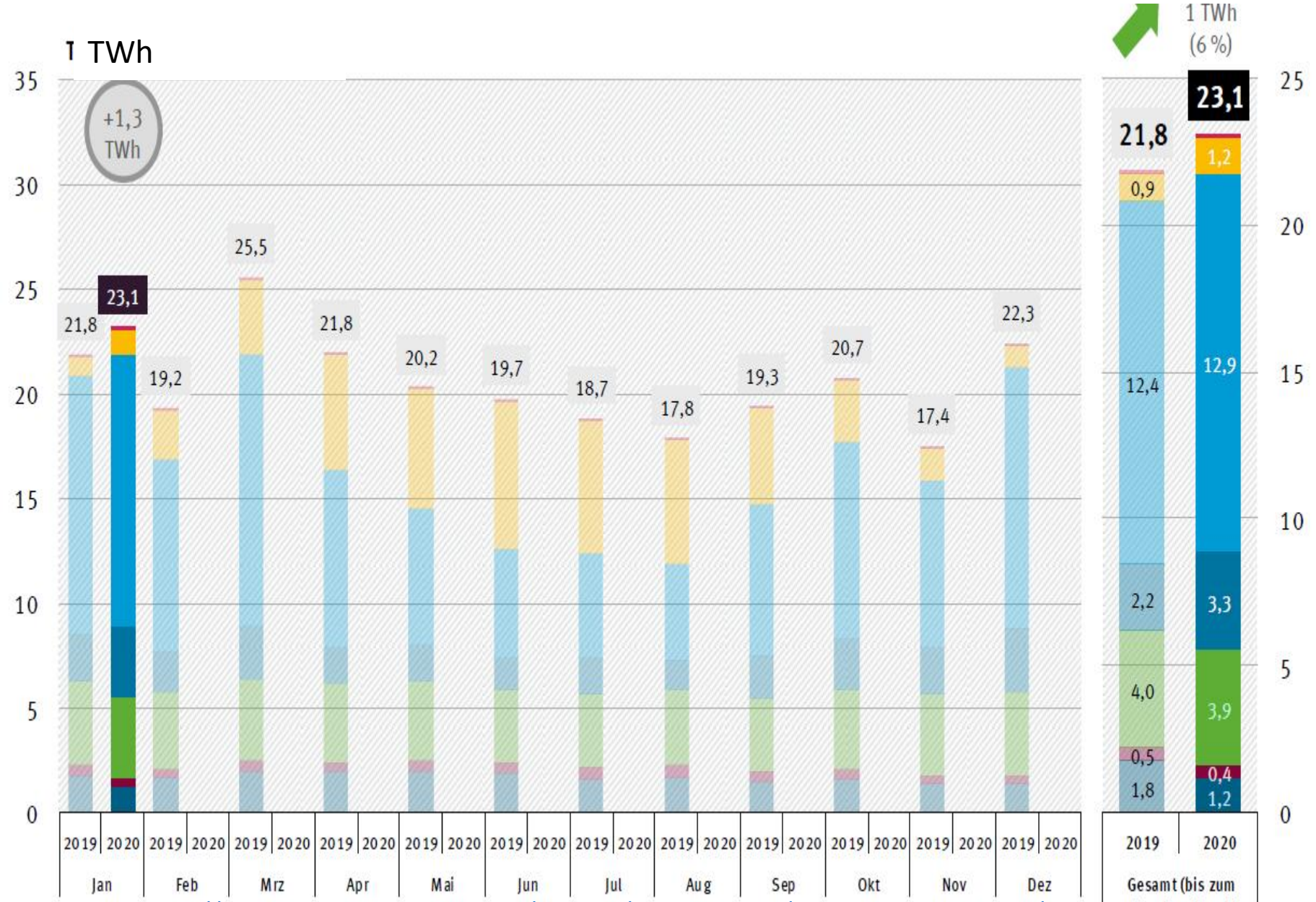
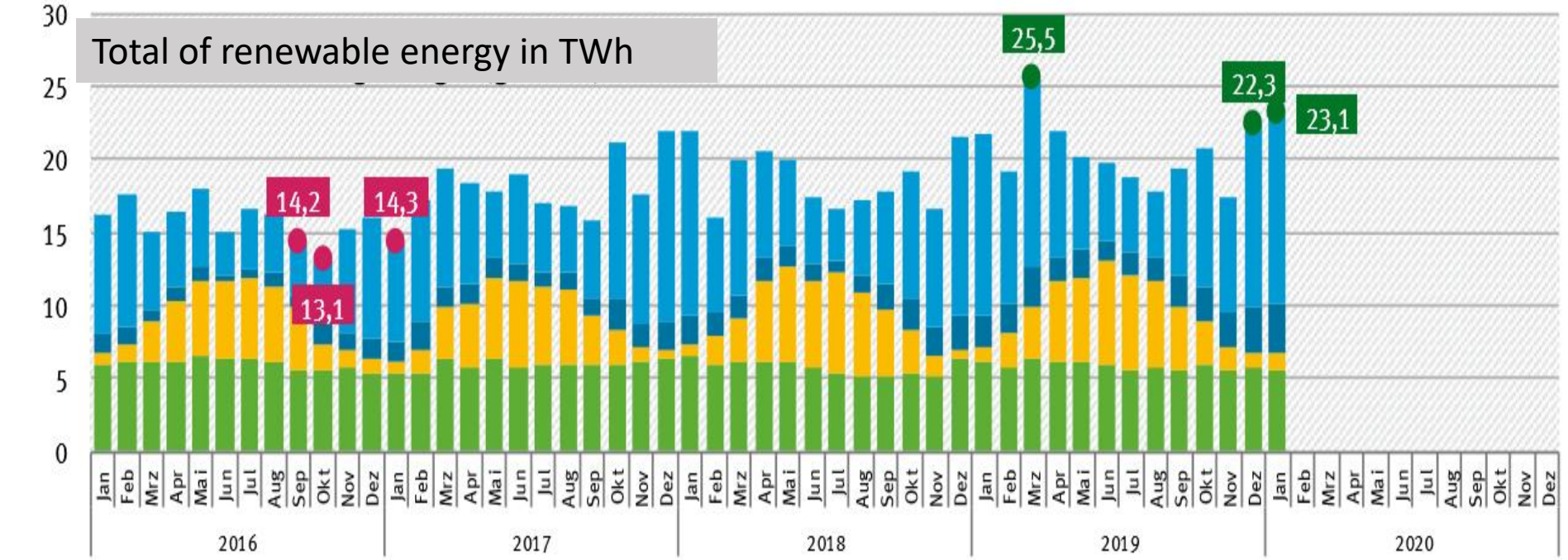
Monthly electricity production from renewables (2019 – 2020)

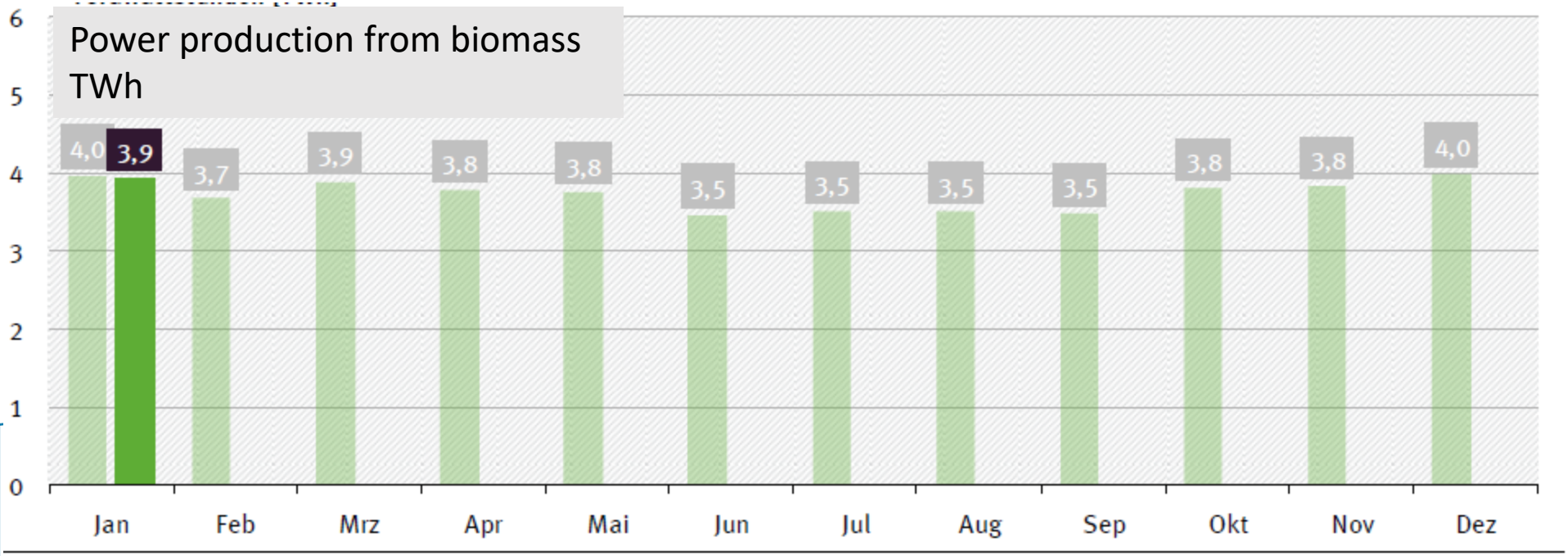


Source: https://www.umweltbundesamt.de/themen/klima-energie/erneuerbare-energien/erneuerbare-energien-in-zahlen/monats-quartalsberichte-der-agee-stat#datenaktualisierung-und-konsistenz

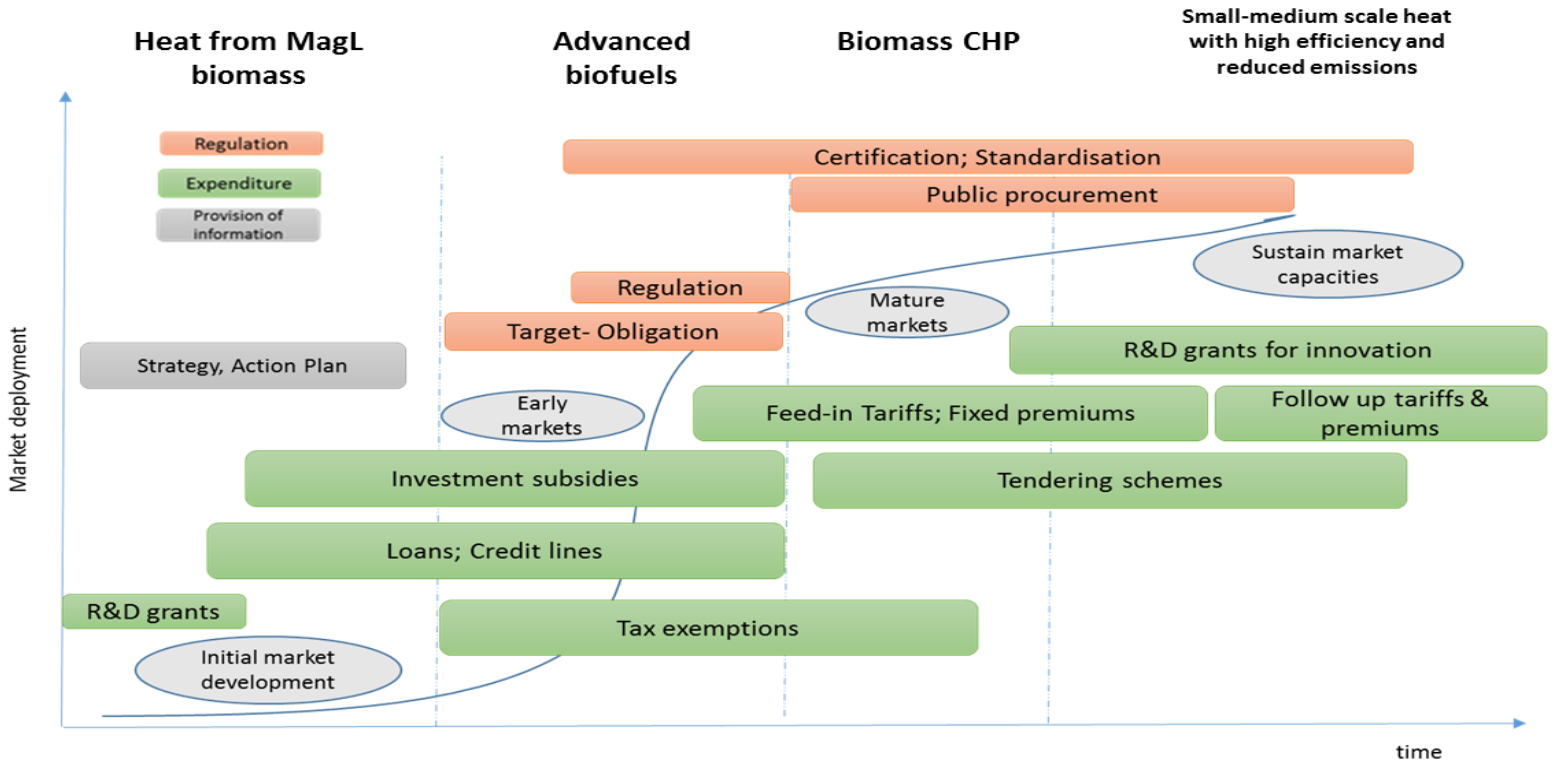
Total of renewable energy in TWh



Power production from biomass TWh



Policy and administrative regulations for biomass production on MagL for bioenergy - selected value chains



(modified and adapted from BiomassPolicies.eu, C. Panoutsou, 2016)

Project coordinator

Partners

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691874

Policies tariffs scheme

The Renewable Energy Source Act (EEG) - Tariff scheme from 2004 to 2017

Source: FNR own collection

Tariffs for Biowaste fermentation

EEG 2004	EEG 2009	EEG 2012	EEG 2014	EEG 2017
		Bio-waste fermentation tariff 14,00 – 16,00 ct/kWh	Bio-waste fermentation tariff 13,38 – 15,26 ct/kWh	

EEG 2004	EEG 2009	EEG 2012	EEG 2014	EEG 2017
Basic tariff **8,40 – 11,50 ct/kWh**	**Basic tariff** **7,79 – 11,67 –ct/kWh**	**Basic tariff** **6,00 – 14,30 ct/kWh**	**Basic tariff** **5,85 – 13,66 ct/kWh**	**Tendering**
		Special tariff for small slurry plants 25,00 ct/kWh	Special tariff for small slurry plants 23,73 ct/kWh	Special tariff for small slurry plants 23,14 ct/kWh
Biomass bonus (crops a/o slurry) 4,00 – 6,00 ct /kWh	Cultivated biomass bonus (energy crops) 4,00 – 7,00 ct/kWh	Input substrate tariff - class I (energy crops) 4,00 – 6,00 ct/kWh	deleted	deleted
	Slurry bonus (min. 30% slurry or manure) 1,00 – 4,00 ct/kWh	Input substrate tariff - class II (ecological valuable substrates as slurry or landscape maintenance residues) 6,00 – 8,00 ct/kWh	deleted	deleted
	Landscape maintenance residues bonus **2,00 ct/kWh**			
CHP bonus 2,00 ct/kWh	CHP bonus 3,00 ct/kWh	Mandatory heat use	No obligation use of heat	
Technology bonus **(e.g.: dry fermentation, gas upgrading)** **2,00 ct/kWh**	**Technology bonus** **(e.g.: gas upgrading, fuel cells)** **2,00 ct/kWh**	**Gas upgrading bonus** **1,00 – 3,00 ct/kWh**	**deleted**	**Flexibility bonus** **130€/kW$_{el}$** **for 100 – 500% extra performance capacity** **65€/kW$_{el}$ ≥500% extra performance capacity**
	Emission reduction bonus (formaldehyde emission) 1,00 ct/kWh	deleted		

Economic and social drivers for optimal bioenergy use

- **Status:**
- Is bioenergy important?

A. It is not important
B. It can be compensated through wind power systems
C. It can be compensate through PV
D. It is important for the baseload

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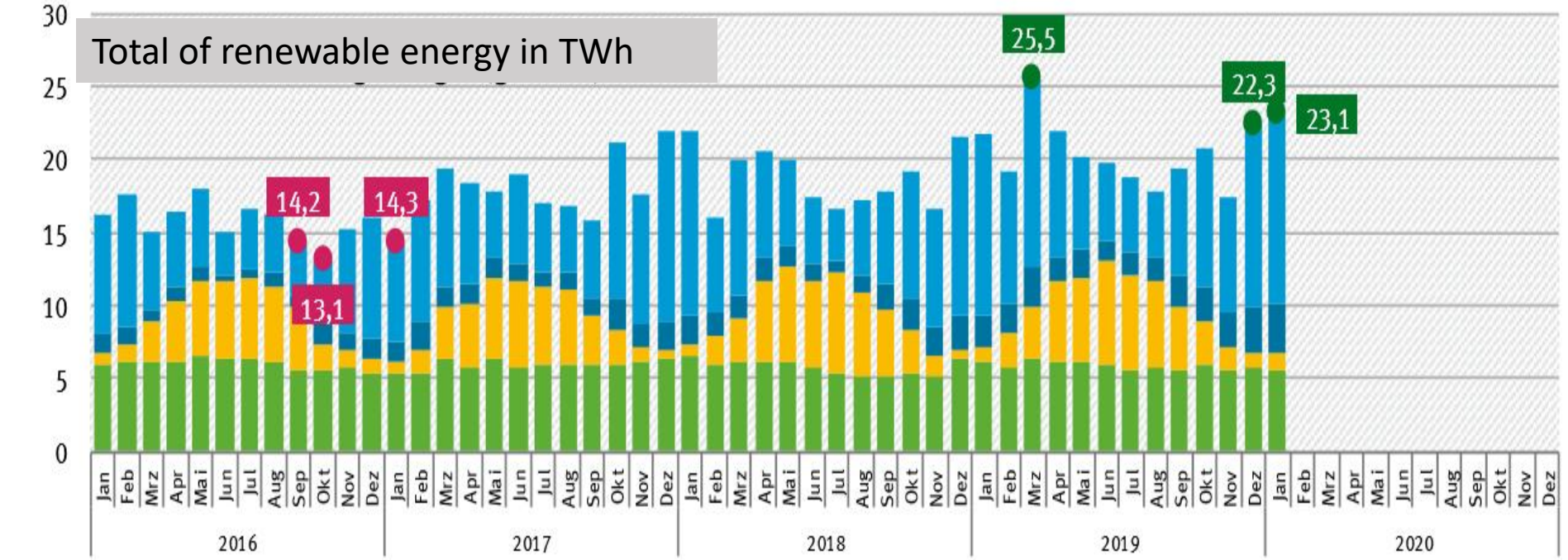
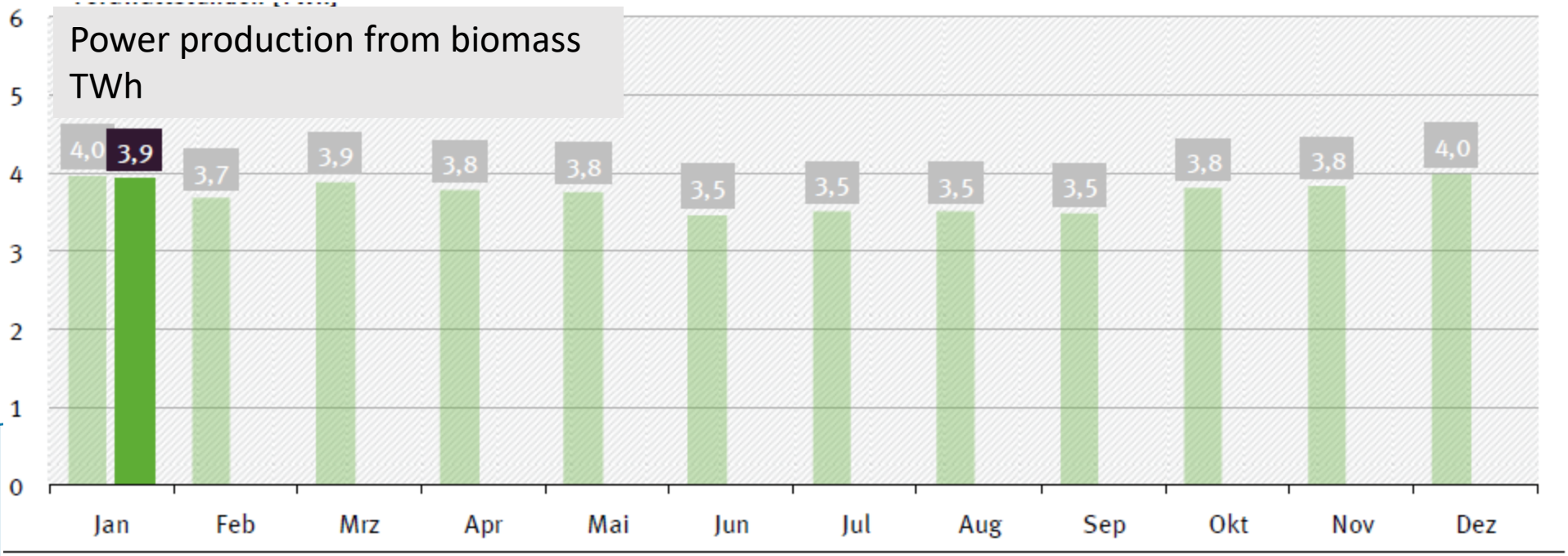
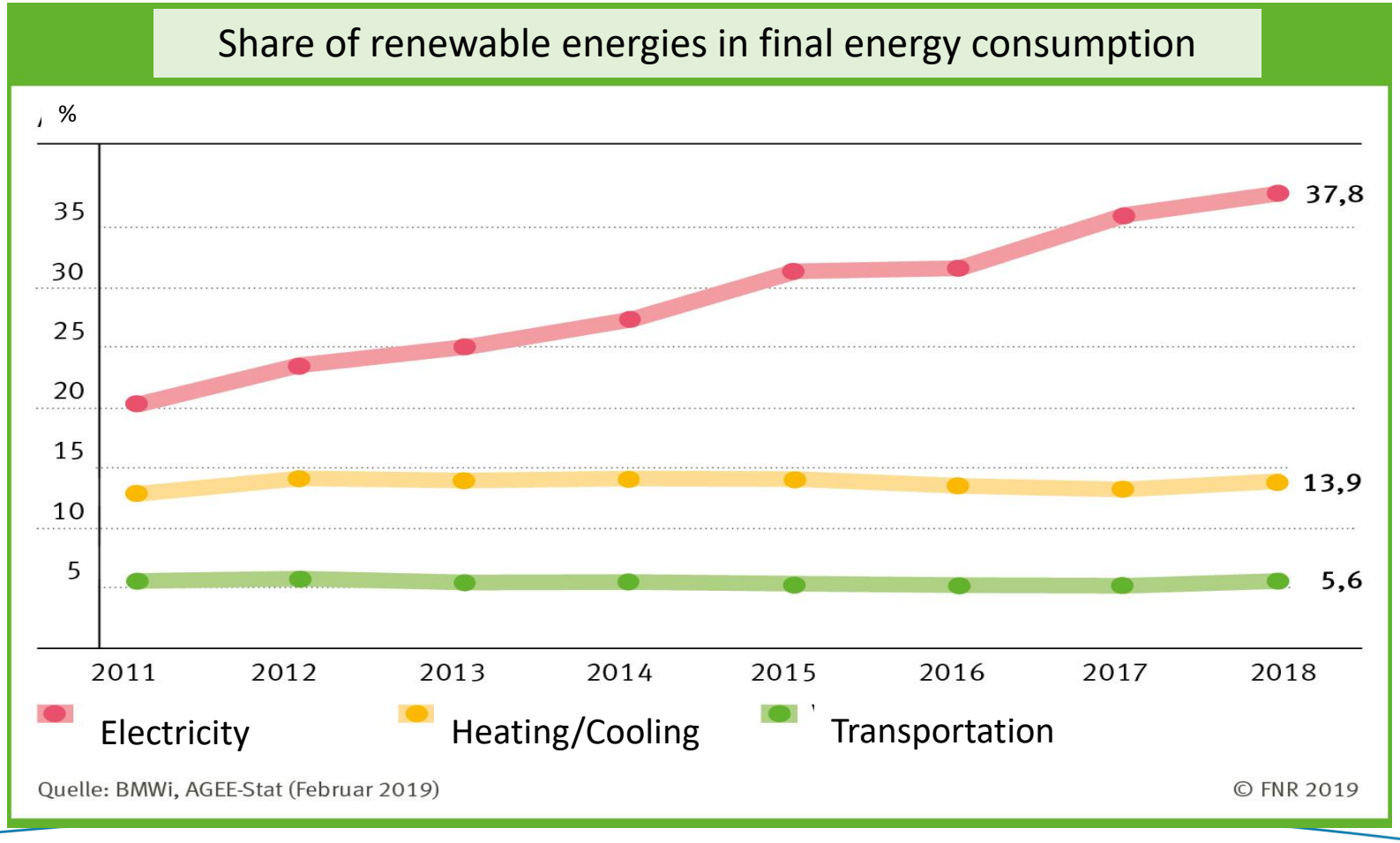
Total of renewable energy in TWh



Power production from biomass TWh



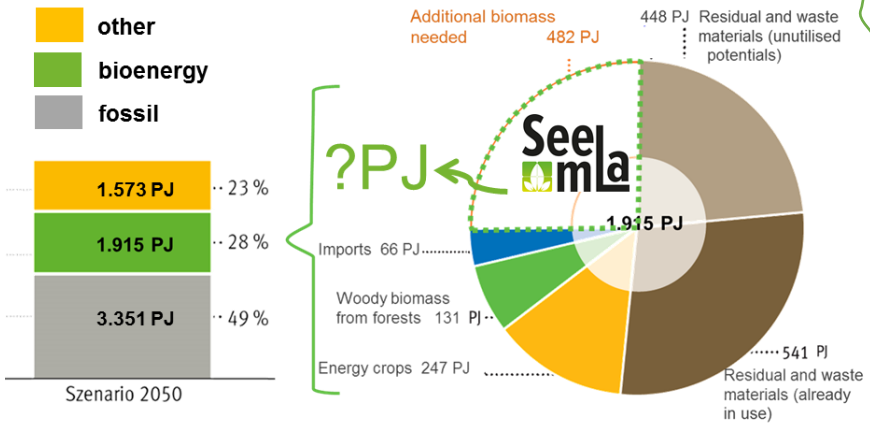
Economic and social drivers for optimal bioenergy use



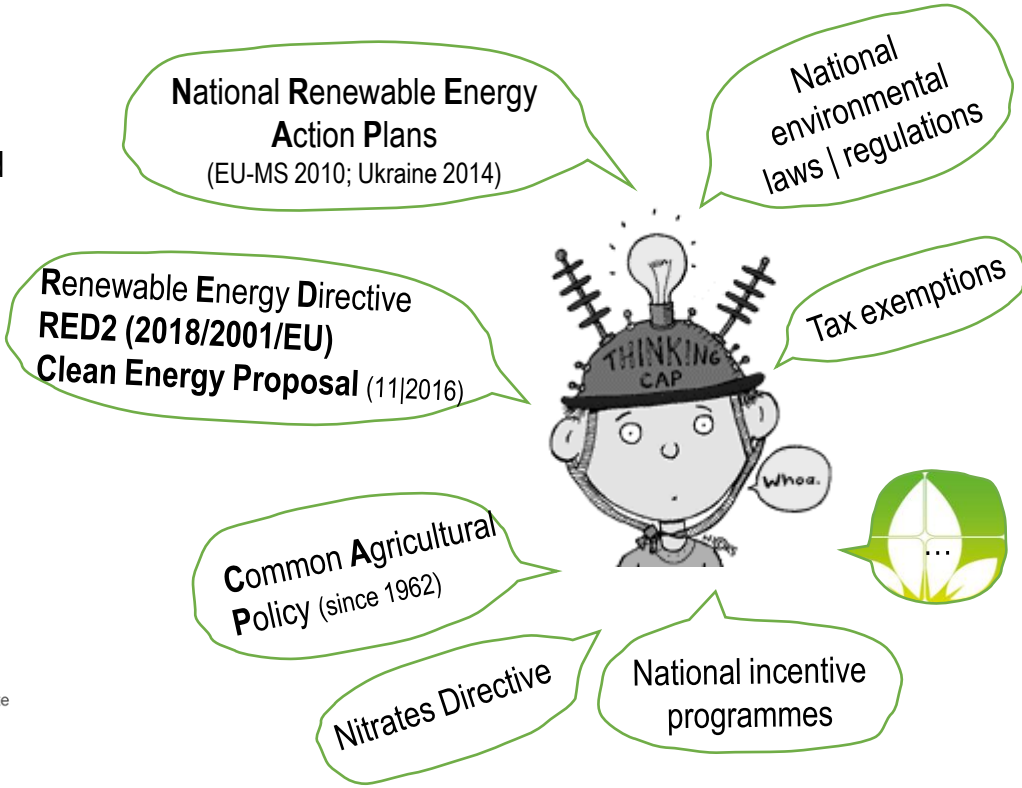
www.slido.do code # C436

"Filling the Gap" of future domestic biomass demand

Energy scenario for Germany 2050 not feasible only with biobased residual and waste materials



Source:FNR, 2016 based on and modified after AGEB 2015, BMWi (forecast) 2014



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691874

Economic and social drivers for optimal bioenergy use

- **Status:**

Who are you?

A. Household
B. Firm / Enterprise
C. Government / Public authority

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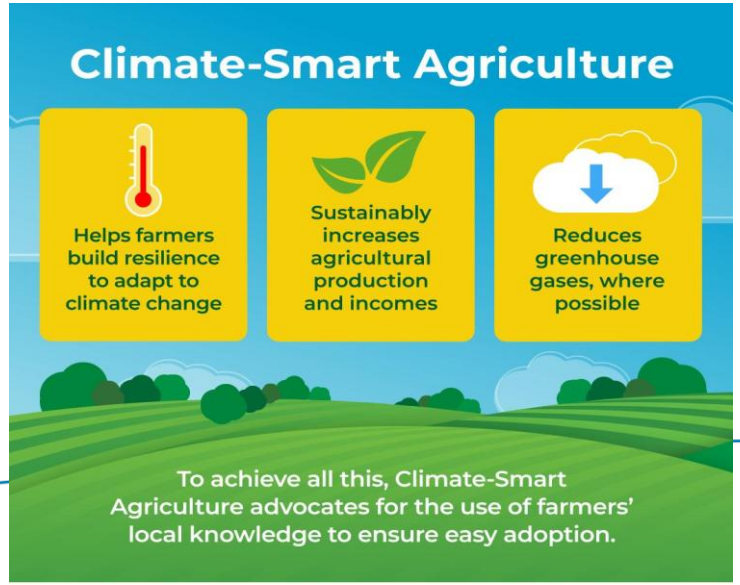
Economic and social drivers for optimal bioenergy use

- **Group household:**

1) Cost in term of capital investment and energy
2) Security and comfort related to supply of bioenergy
3) Local bioenergy supply: employment, welfare and local tax income



Source: https://www.linkedin.com/posts/fao_foodsecurity-sdgs-activity-6638242827346280451-uA_J

Future:
choose criteria how to use scarce resources to facilitate outcomes that are in the best interest of society/households

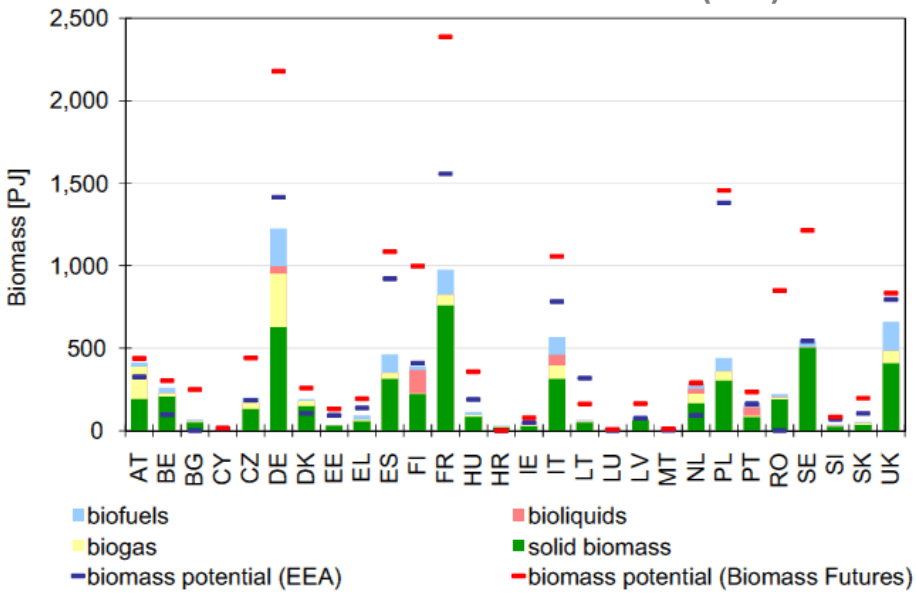
Economic and social drivers for optimal bioenergy use

- **Group Firm / Enterprise:**

A. Technically feasible
B. Economically feasible
C. Socially feasible

What is an innovation ecosystem in the bioenergy sector?

Primary biomass demand in 2020 and biomass potential in EU Member States (MS)



Criteria

- **GHG mitigation and carbon sequestration**
- **Creation of new jobs in rural areas**
- **Increase of biodiversity**
- **Avoidance/minimization of conflicts in the 'food vs. fuel' debate**

Source: Scarlat, N., Dallemand, J.-F., Monforti-Ferrario, F., Banja, M., Motola, V., 2015. Renew. Sustain. Energy Rev., 51:969-985

Economic and social drivers for optimal bioenergy use

- **Group Government / Public authority:**

I. Economically feasible
II. Socially feasible
III. Harmonizing policies
IV. Land use demand for energy & food?

Criteria

- **GHG mitigation and carbon sequestration**
- **Creation of new jobs in rural areas**
- **Increase of biodiversity**
- **Avoidance/minimization of conflicts in the 'food vs. fuel' debate**

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