



Federal Ministry  
for Economic Affairs  
and Energy




# Overview of the German power market architecture II

The Erneuerbare Energien Gesetz (EEG) and its role in the deployment of renewable energy assets


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# Renewable energy policy measures tackle all energy sectors



## Electricity

- Priority access and dispatch for renewable energy
- Support scheme for renewable energy production
- Low interest loans for renewable energy investments



## Heating

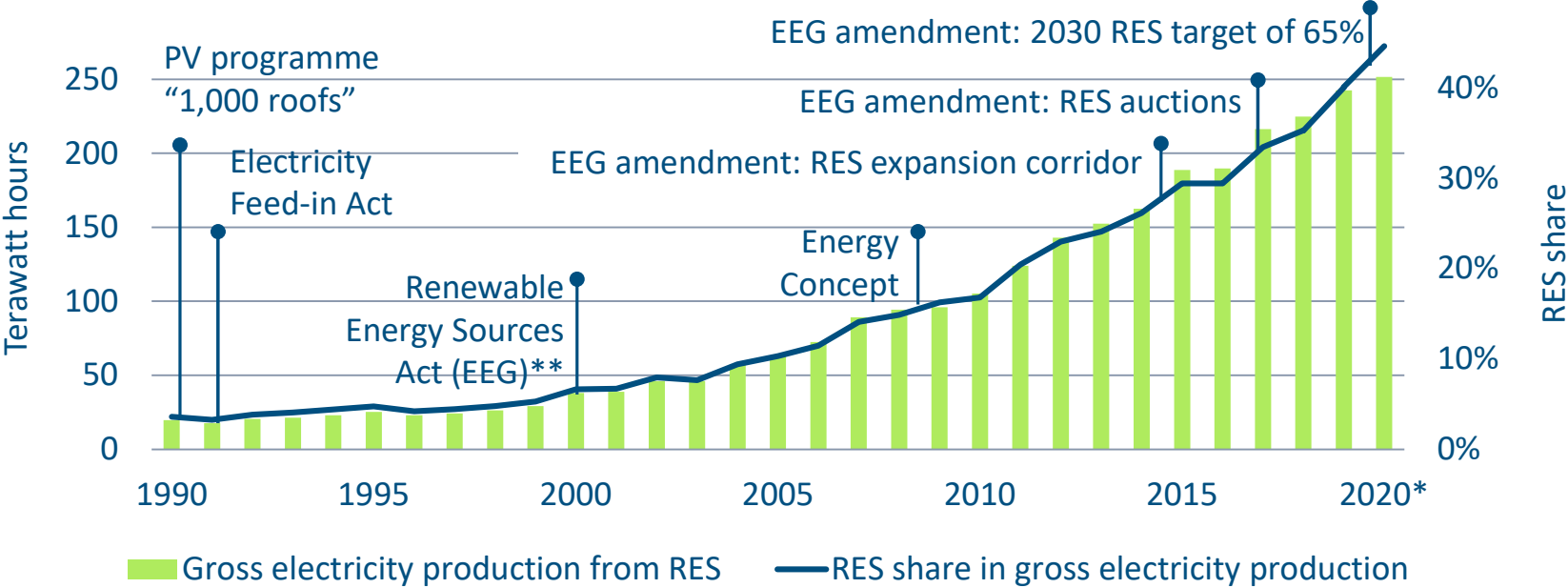
- Renewable Energies Heating Act with requirements for new buildings
- Financial support through Market Incentive Programme



## Transport

- Emission reduction quota for biofuels
- Tax incentive for natural gas
- Tax exemptions for electric and hydrogen vehicles

# Continuous policy development has fostered the deployment of renewables in Germany



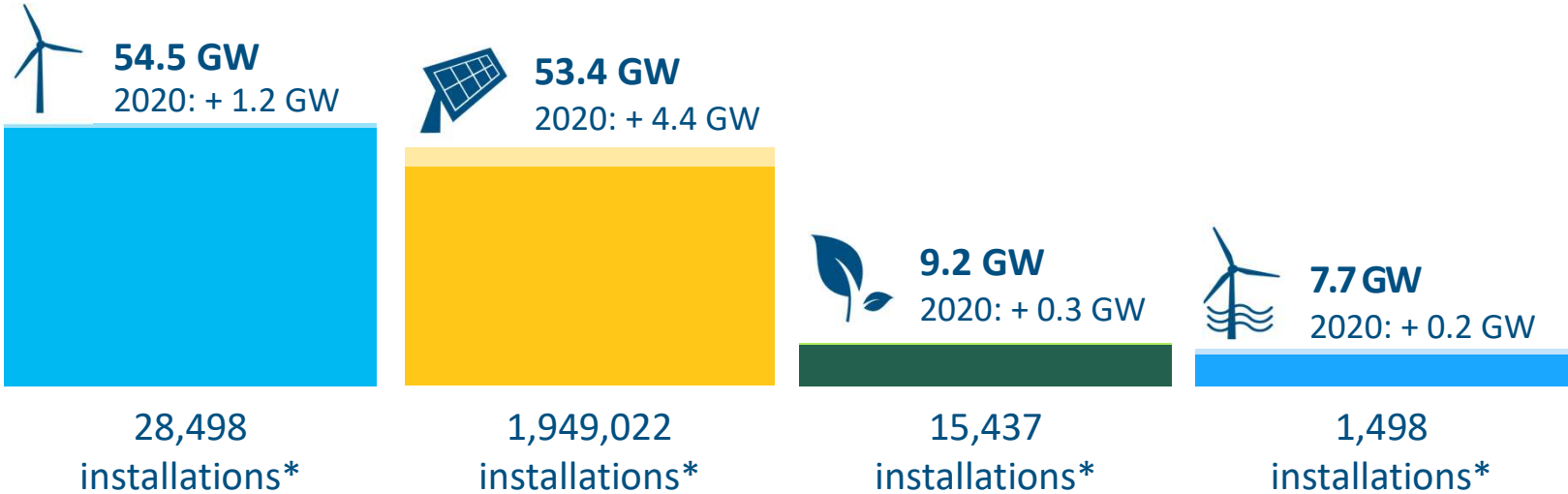
Source: Guidehouse 2021 based on AGEB 2020



\* preliminary data  
 \*\* EEG amendments in 2004, 2009 and 2012 are not depicted.

# Capacities of renewables are growing steadily

Installed capacities of Germany's most important renewable energy sources in 2020

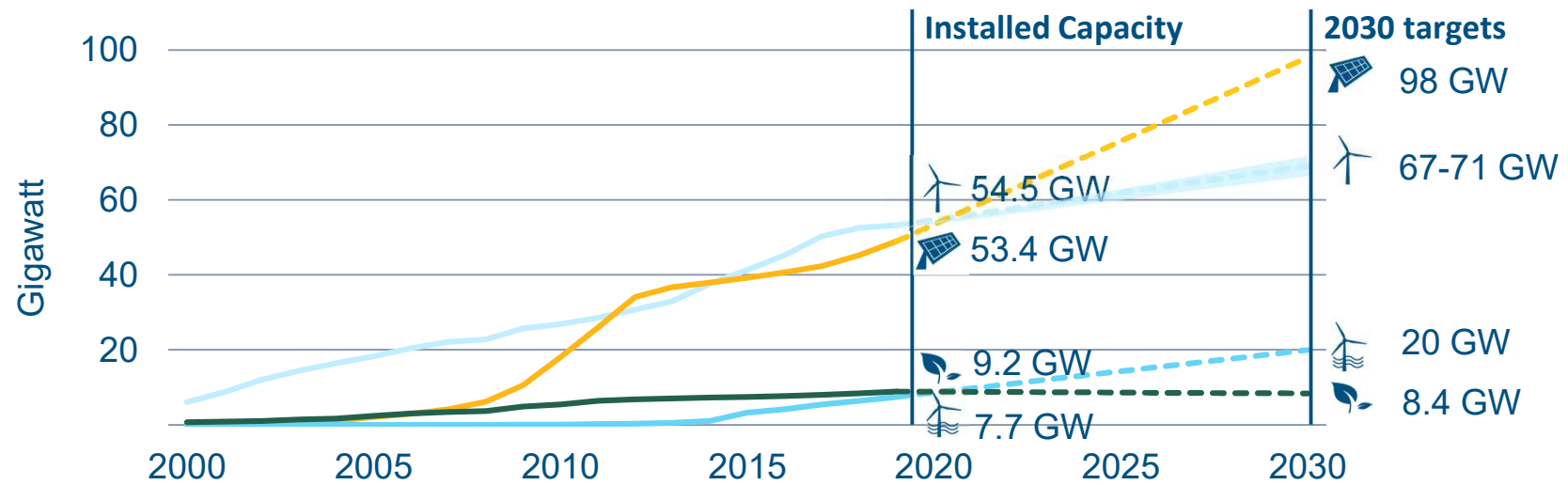


Source: Guidehouse 2021 based on BMWi 2020, BNetzA & BKartA 2021 & Agora Energiewende 2021

\* Number of installations eligible for EEG levy payments in June 2020

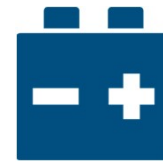
# Technology-specific capacity expansion targets make deployment of renewables plannable

Renewable energy installed capacity 2000-2020 and capacity targets for 2030 per technology



Source: Guidehouse 2021 based on BMWi 2020, BReg 2019, EnSaG 2018, EEG 2017, BNetzA 2019 & Agora Energiewende 2021

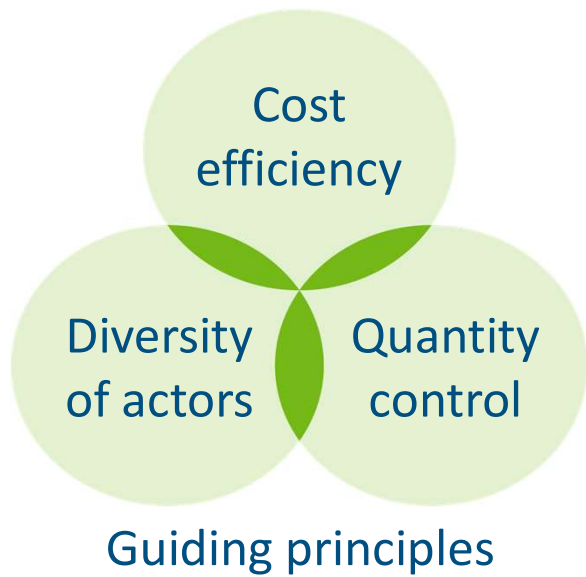
# The EEG stipulates measures to deploy renewable electricity in a plannable, efficient & secure way



Guaranteed grid access & priority dispatch	Technology-specific capacity addition corridor	Support payments: feed-in premium via auctions	EEG surcharge to offset support costs	Regular monitoring and evaluation
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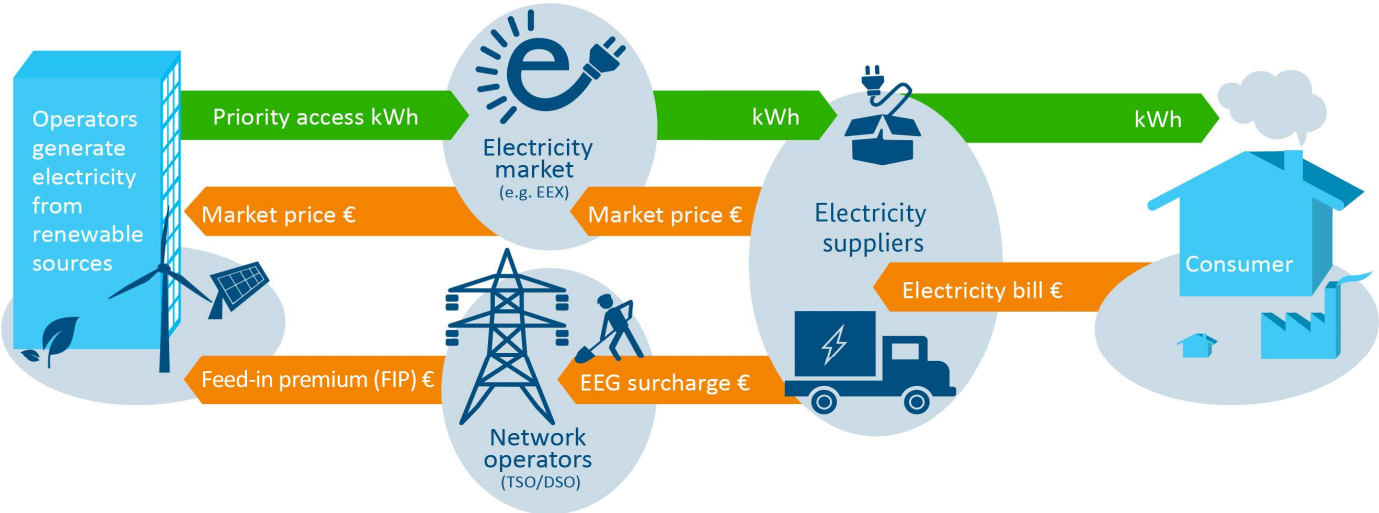
Source: Guidehouse 2016 based on BMWi 2016

# The 2017 Renewable Energy Sources Act (EEG) introduced auctions for new installations



# Priority access and feed-in premiums incentivize the market integration of renewables

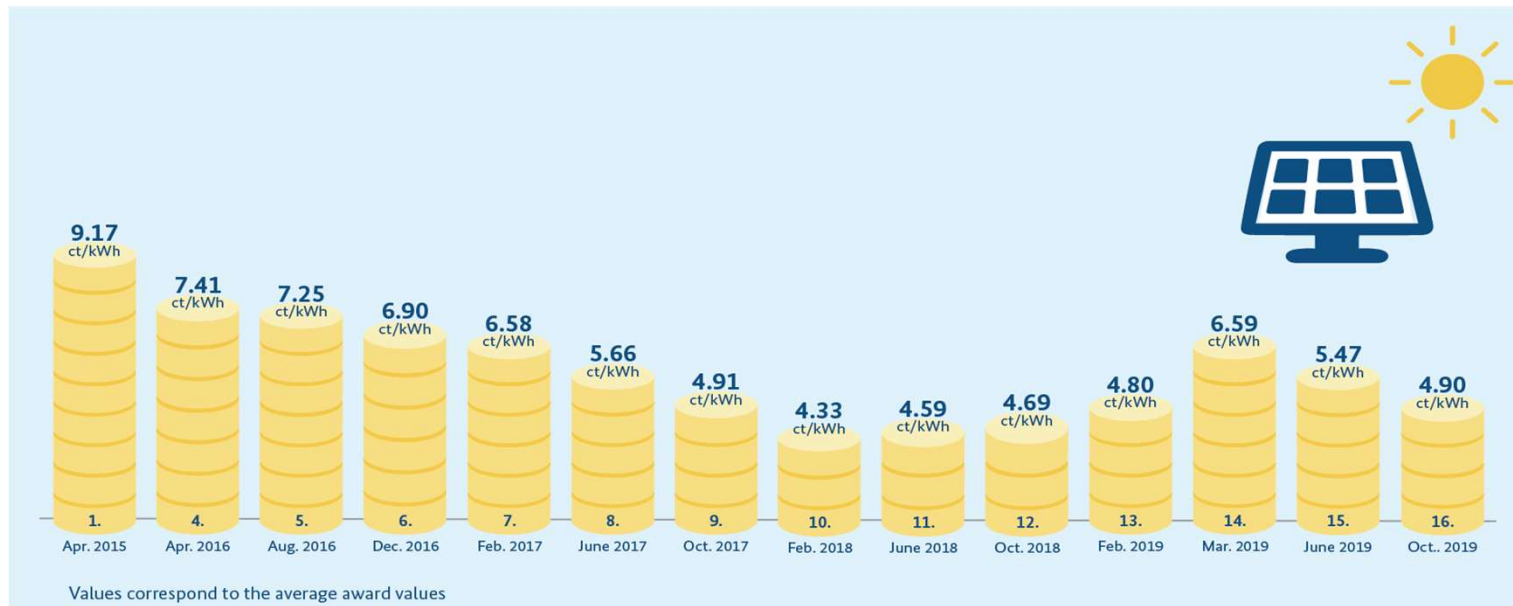
Remuneration of electricity generation under Renewable Energy Sources Act (EEG)



Source: Guidehouse based on BMWi & Edelman.ergo 2016









# Support costs for solar PV declined significantly since the introduction of auctions in 2015



Source: Guidehouse & Edelman 2019 based on BNetzA 2019

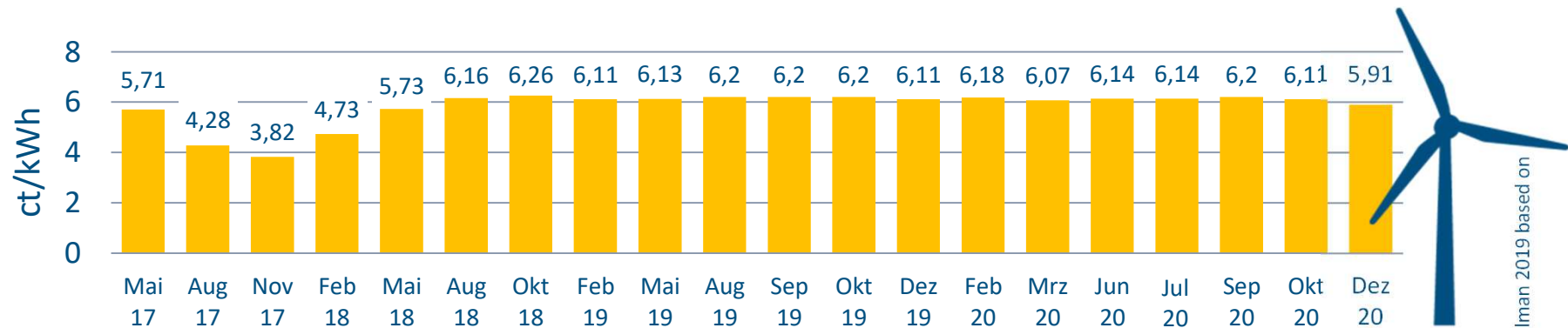
# Pre-selected offshore wind areas to be auctioned from 2021 onwards

Site selection		By the Federal Maritime and Hydrographic Agency (BSH)
Auction volume		~1 GW annually (2021-2023), ~3 GW (2024), ~4 GW (2025)
Commissioning		From 2026 onwards
Guarantees		€200/kW
Bid award		Lowest bid offered; if multiple zero-subsidy bids by lot
Revenues		a.) electricity market sales + b.) feed-in premium



Source: Guidehouse 2020 based on Windenergie auf See Gesetz 2020, EEG 2017, BSH 2020

# The new EEG shall keep prices low and prevent undersubscribed auctions for onshore wind



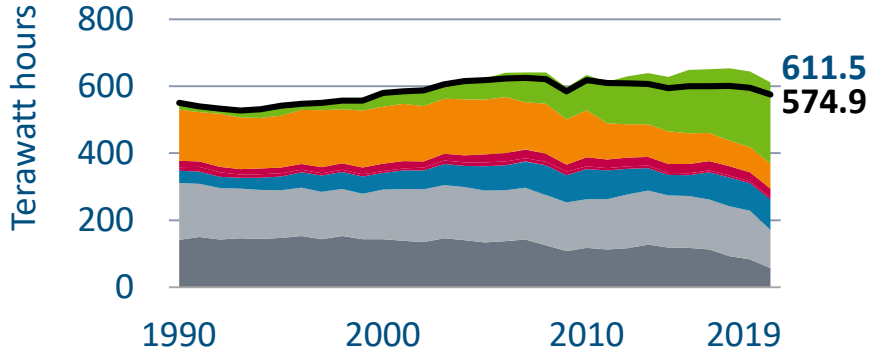
- Reduction of the auction volumes for the following round if previous auction was undersubscribed.
- From 2022, the maximum permitted value according to the EEG 2021 will decrease by 2% per year.
- New quota for the southern region: Only bids from the southern region will be awarded preferentially until 15 percent of the auction volume has been reached.

Source: Guidehouse & Edelman 2019 based on BNetzA 2019

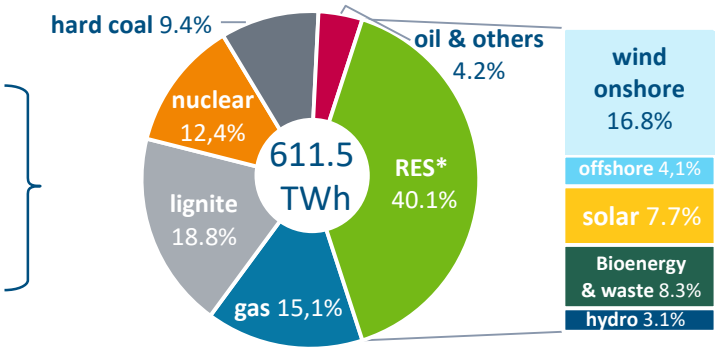
# Outcomes and Lessons Learned

# Renewables have become Germany's No. 1 source of electricity

Gross electricity generation in Germany

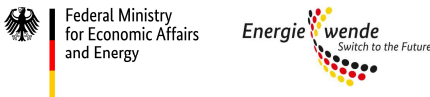


Electricity mix in 2019



- hard coal
- lignite
- wind onshore
- bioenergy & waste
- oil & others
- natural gas
- wind offshore
- hydro
- renewables (RES)
- nuclear
- solar
- electricity consumption

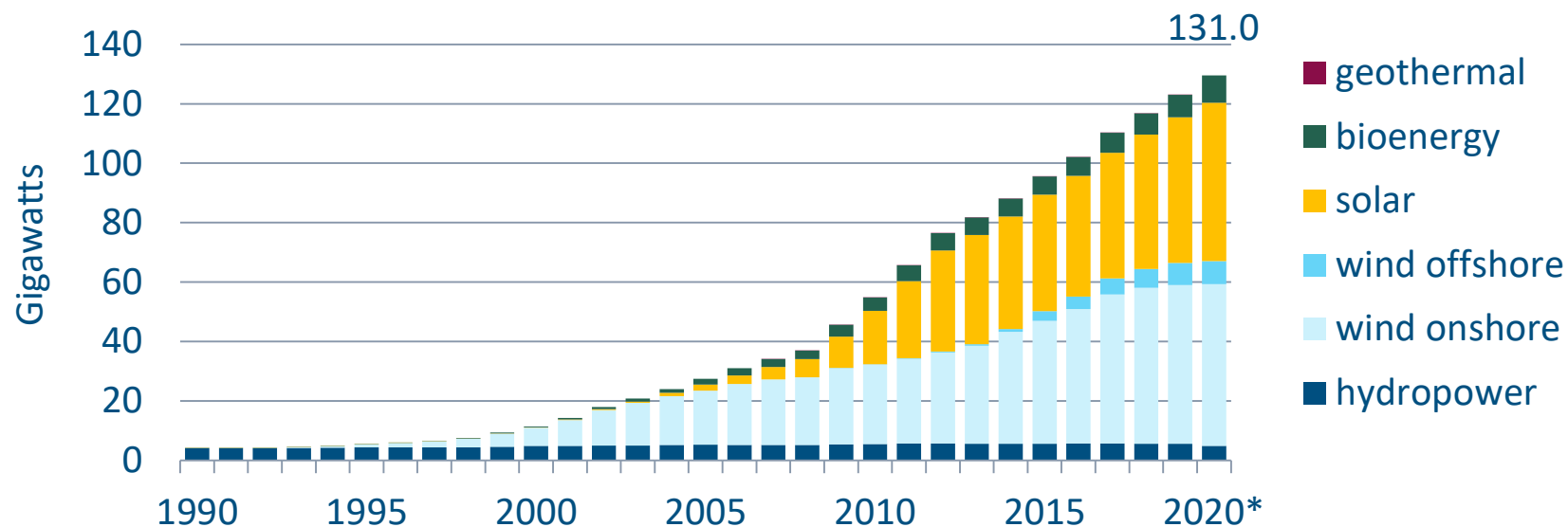
\* 40.1% RES in gross electricity generation corresponds to 42.2% RES in gross electricity consumption.



Source: Guidehouse 2020 based on AGEB 2020

# The installed capacity of renewables in Germany has more than tripled during the past decade

Installed capacity of renewable energy sources in Germany



Source: Guidehouse 2021 based on BMWi 2020 & Agora Energiewende 2021

\* preliminary values for installed capacities in 2020

# EEG – Lessons Learned

- Continuous and stable regulation are key to sustainable deployment of renewables
- Cost-effectiveness monitoring is vital to ensure public support
- Given the cost-competitiveness of today's renewables, market-based deployment schemes appear advisable

# Thank you for your attention!

## Contact details

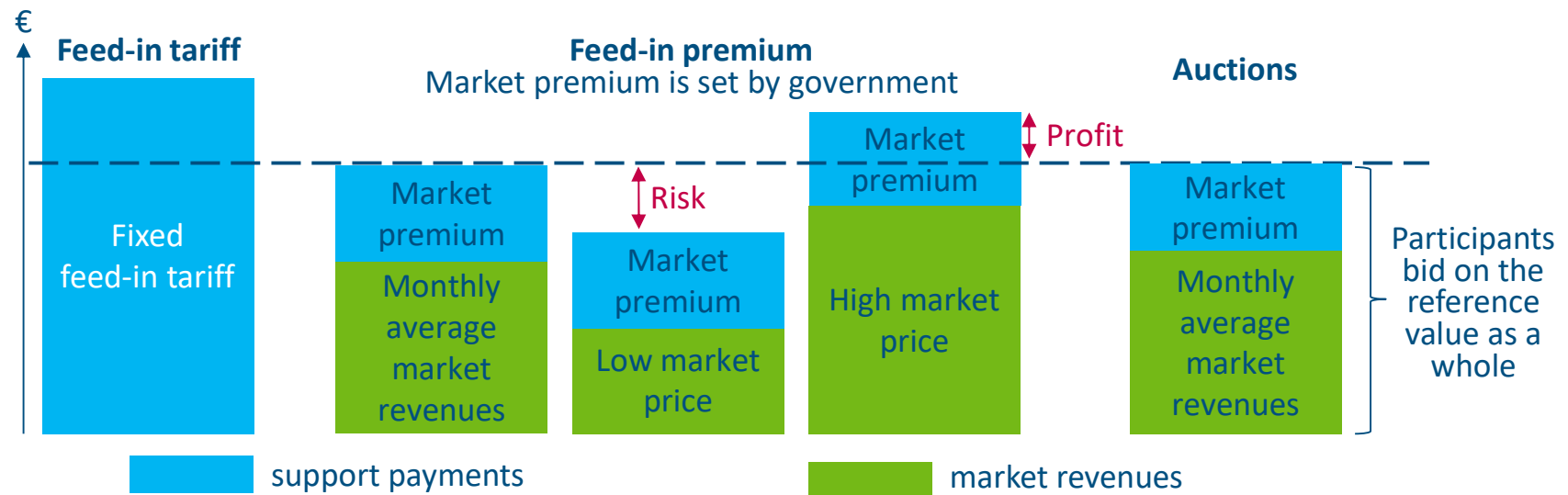
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# Premium system increases market integration of renewables

Types of remuneration under Renewable Energy Sources Act (EEG)



Source: Guidehouse 2019