ECOS

Welcome to our Webinar on

Environmental Impact Assessment (EIA) Key or Hindrance for the Expansion of Renewables in Germany and Japan?

Supported by:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

Host and Experts

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Agenda

Background

Wind and Solar Energy Development in Germany and Japan

Environmental Impact Assessment in Germany and Japan

Legal Basis, Actors, Procedure

Summary / Discussion

Background

Focus on PV and Wind

IEA Wold Energy Report 2019 (Stated Policies Scenario):

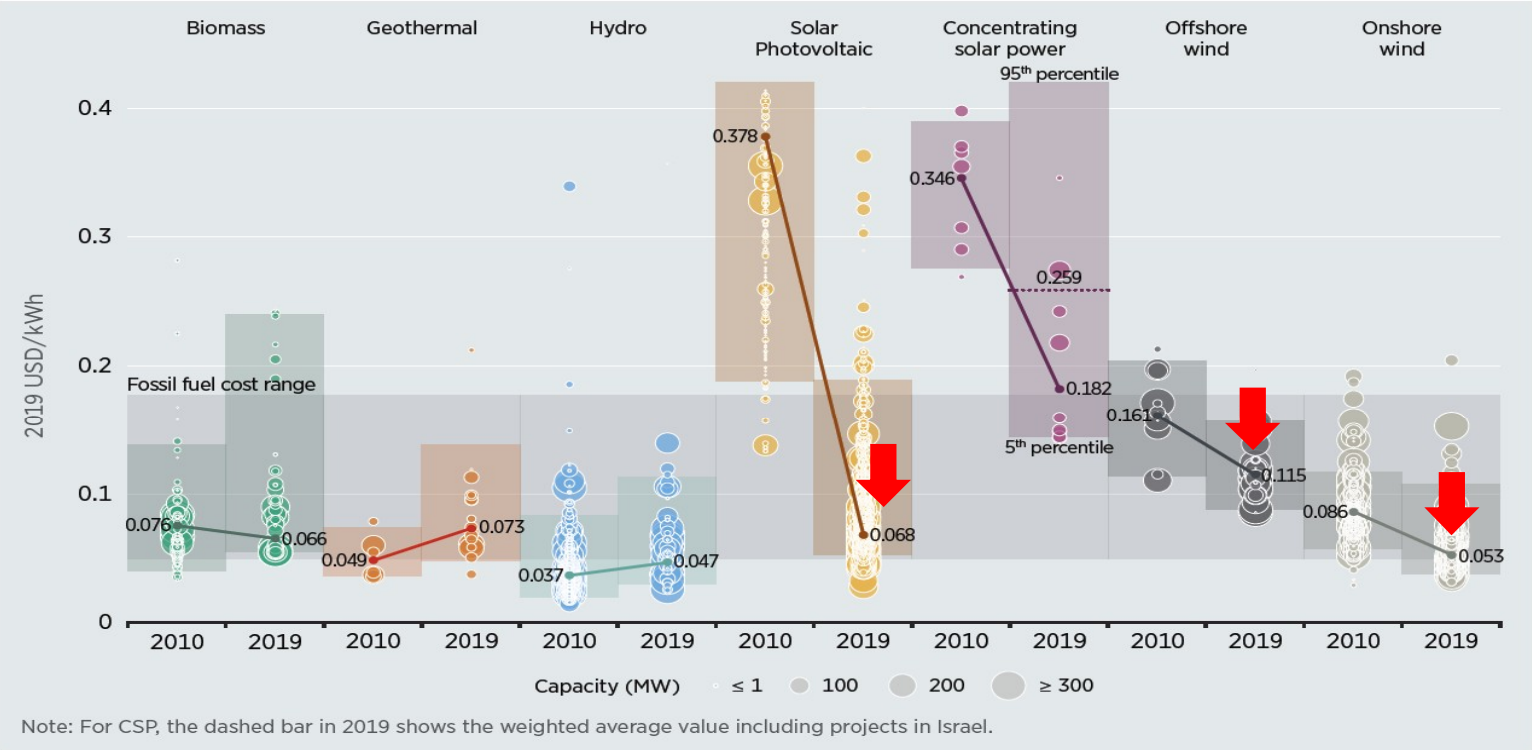
"The expansion of generation from wind and solar PV helps renewables overtake coal in the power generation mix in the mid-2020s.

By 2040, low-carbon sources provide more than half of total electricity generation. Wind and solar PV are the star performers [...]"

Background

RE costs continue to drop

Figure 1.2 Global LCOEs from newly commissioned utility-scale renewable power generation technologies, 2010-2019



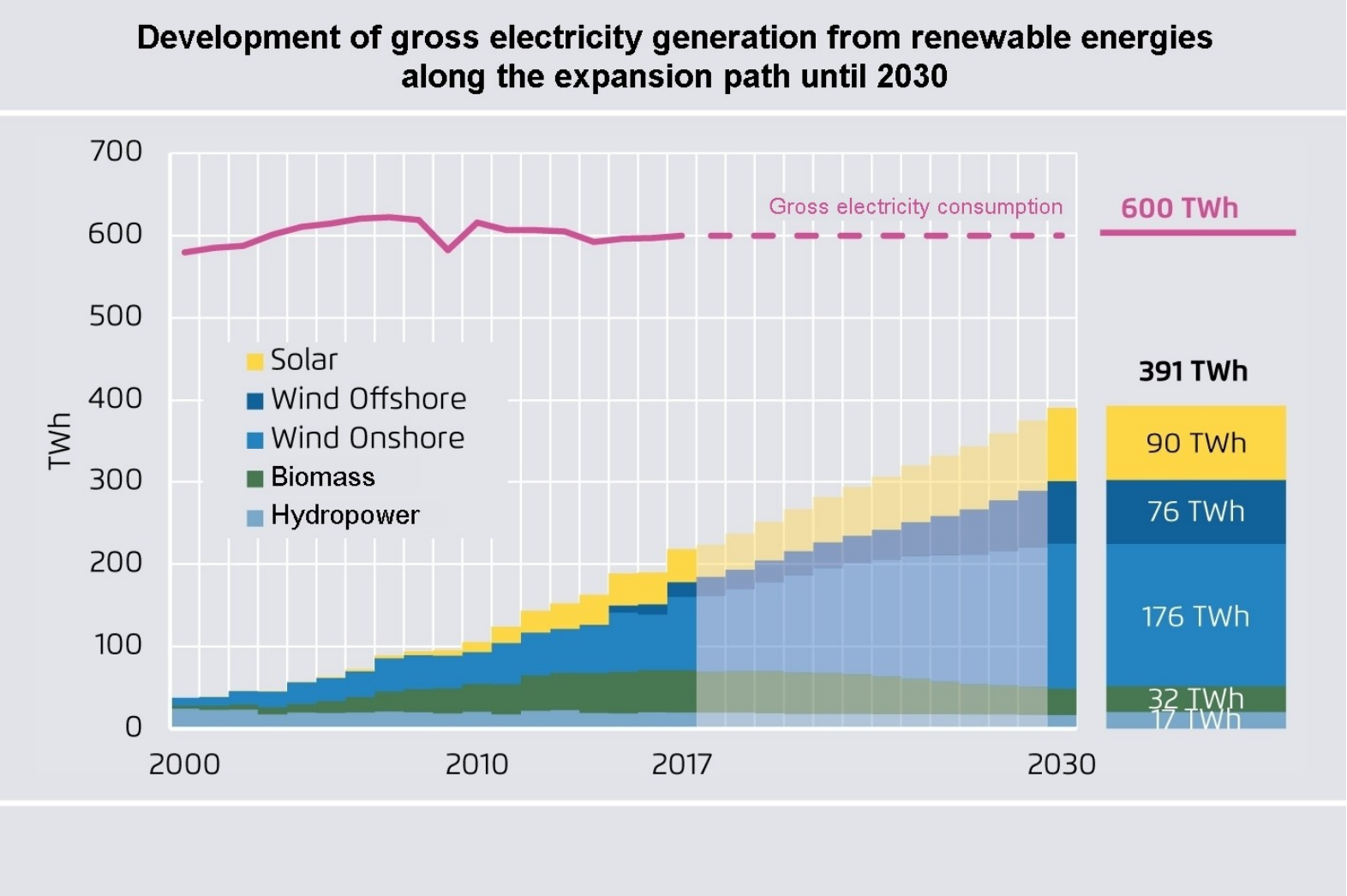
Source: IRENA Renewable Cost Database.

Note: This data is for the year of commissioning. The diameter of the circle represents the size of the project, with its centre the value for the cost of each project on the Y axis. The thick lines are the global weighted-average LCOE value for plants commissioned in each year. Real weighted average cost of capital (WACC) is 7.5% for OECD countries and China and 10% for the rest of the world. The single band represents the fossil fuel-fired power generation cost range, while the bands for each technology and year represent the 5th and 95th percentile bands for renewable projects.

Source: IRENA Report „Renewable Power generation Costs in 2019“

Background

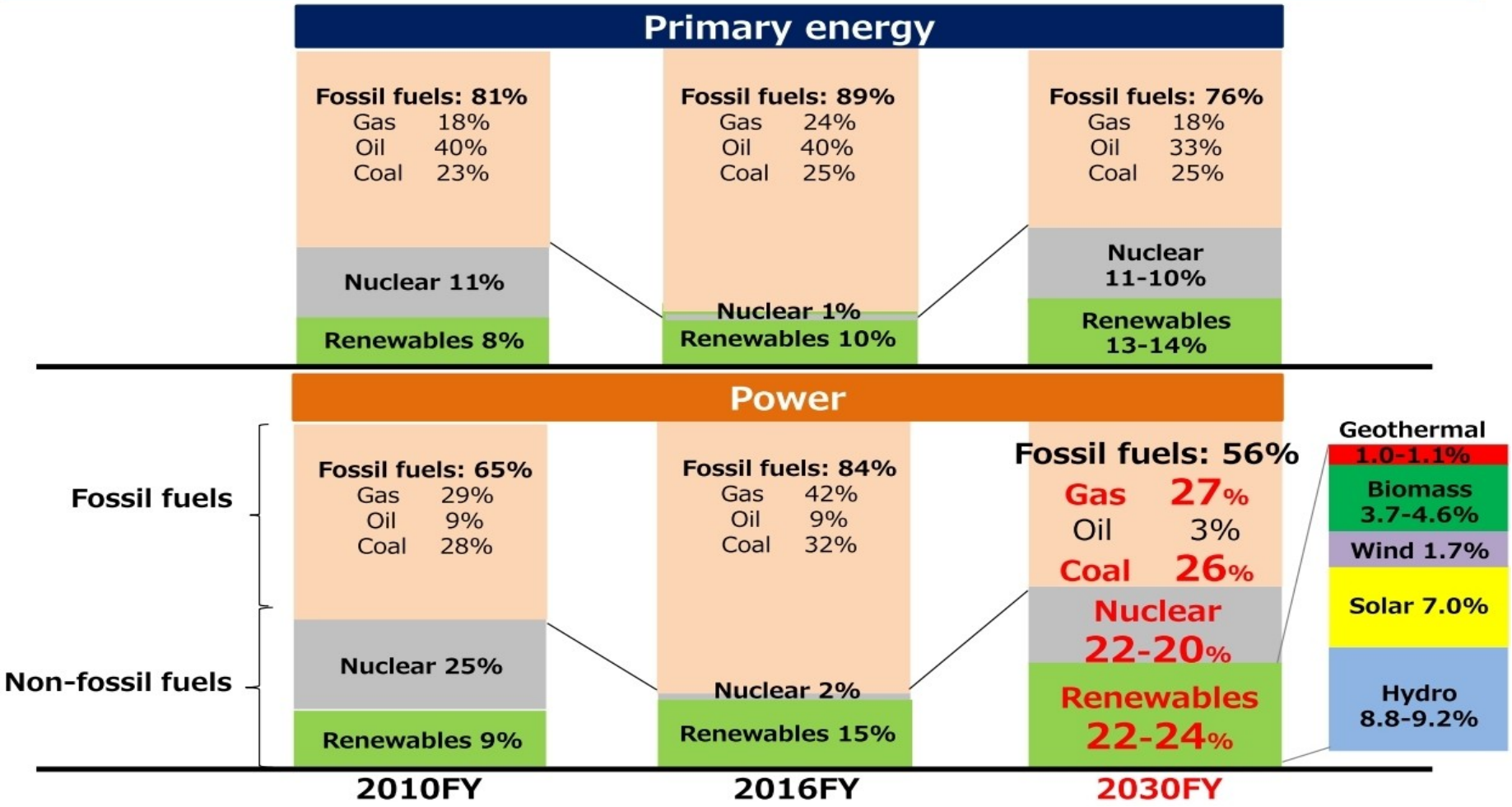
RE expansion plans in Germany



Source: Agora Energiewende, Germany, 2020

Background

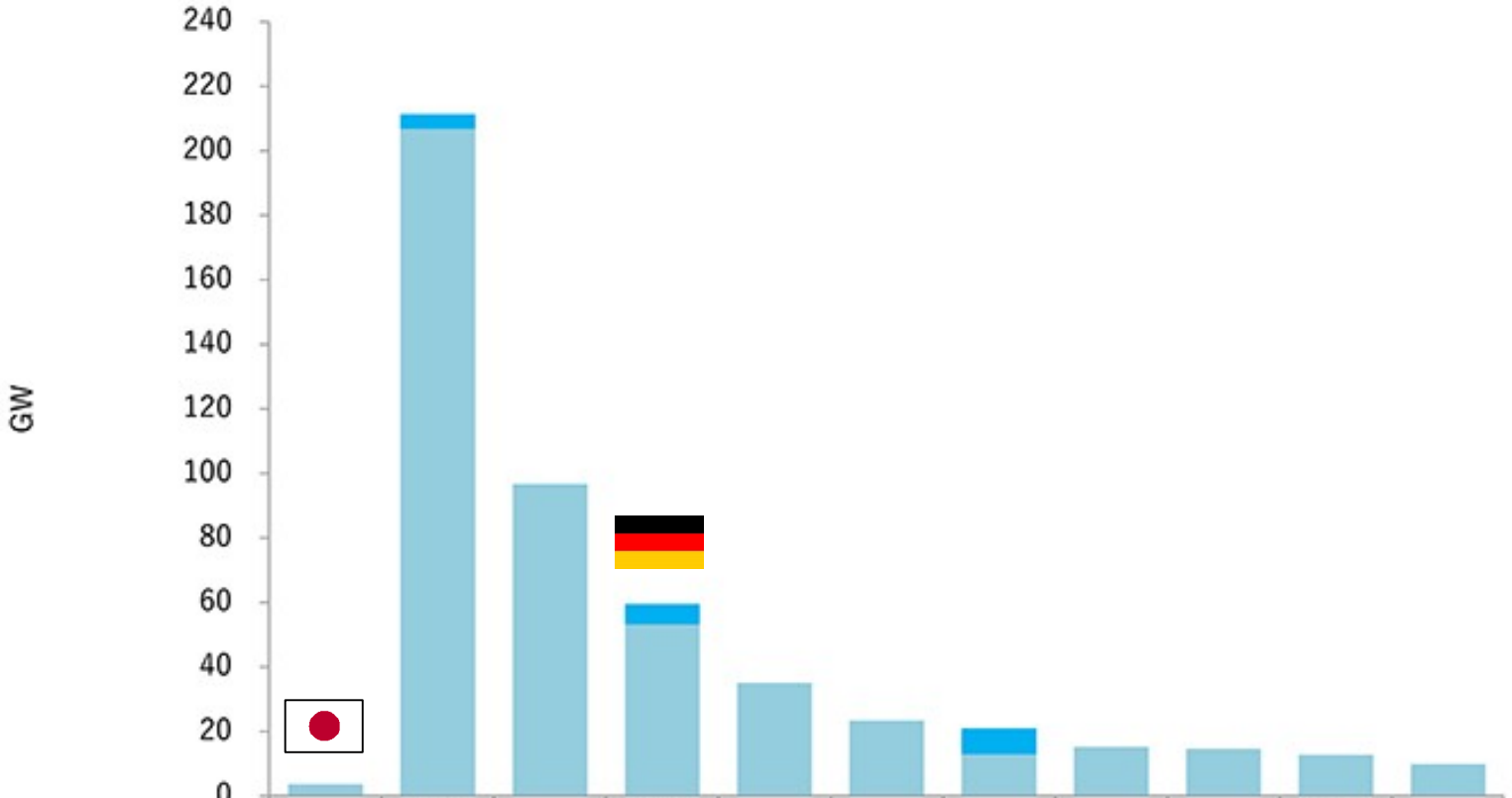
RE expansion plans in Japan



Source: METI 2018

Background

Wind: Installed capacity (cumulated) end of 2018 (in GW)

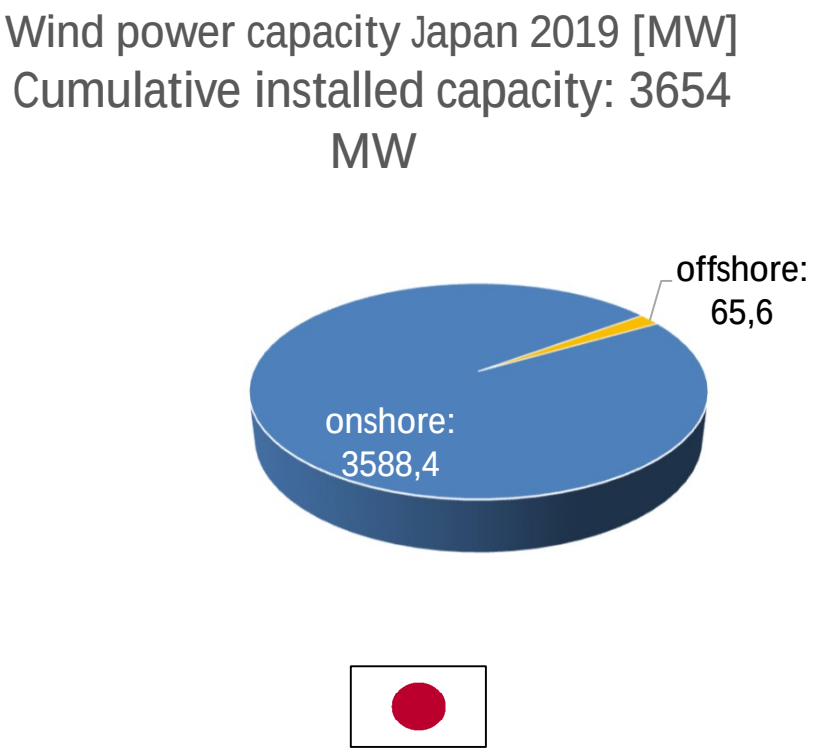


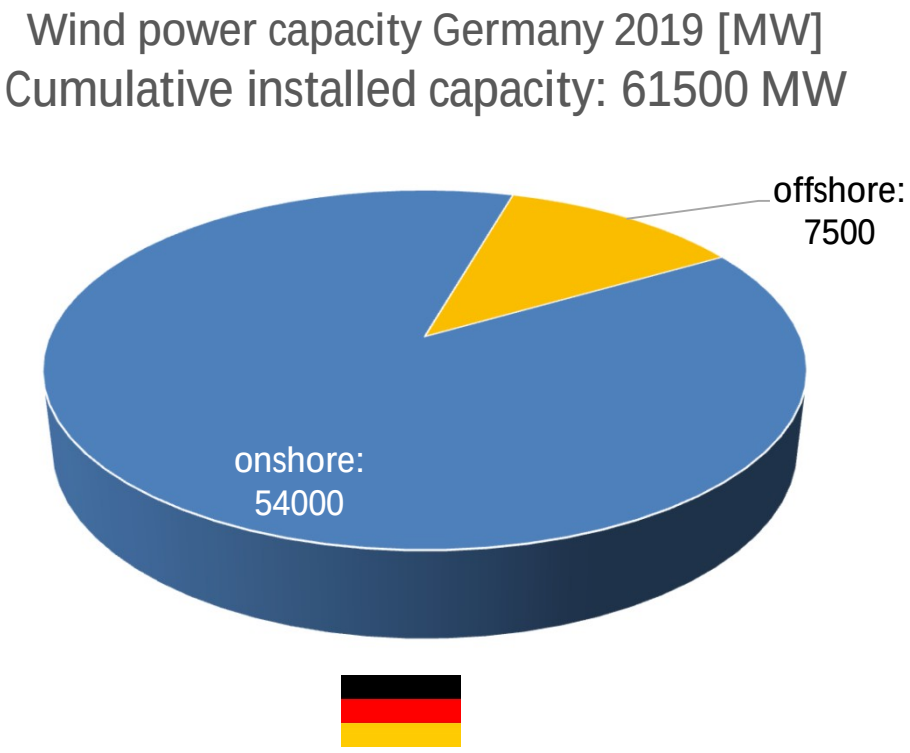
	JAPAN	PR China	US	Germany	India	Spain	UK	France	Brazil	Canada	Italy
Offshore wind	0.0	4.6	0.0	6.4	0.0	0.0	8.0	0.0	0.0	0.0	0.0
Onshore wind	3.7	206.8	96.6	53.2	35.1	23.5	13.0	15.3	14.7	12.8	10.0

Source: Renewable Energy Institute (REI), Japan (2019)

Background

Wind: Installed capacity in Japan and Germany (2019)





Sources: Japan Wind Power Association 2020, Agency for Renewable Energies (AEE) 2020

Background

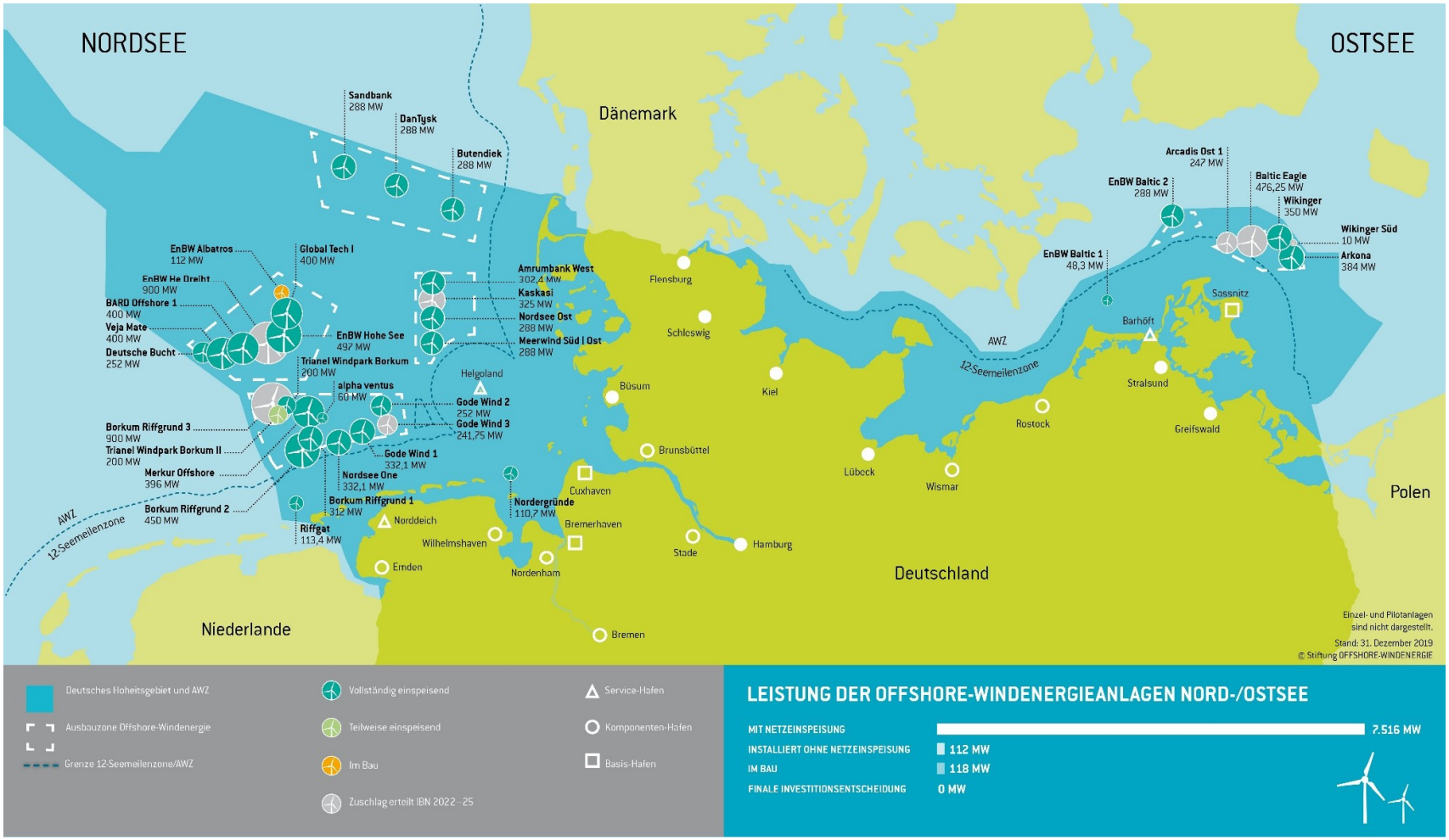
Wind Farms in Germany

Offshore Windpark Butendiek, North Sea, 288 MW (2015)

Onshore Windpark Friedrichskoog, 203 MW (2010)

Background

Offshore Wind: installed capacity on the German coast (2019)



Source: Stiftung Offshore Windenergie 2020

Background

Wind Farms in Japan

Inami/Wakayama Pref., 26 MW (2018)

Ports of Akita and Noshiro, 140 MW (from 2022)

Background

Demonstration Projects for Floating Offshore Wind Turbines

Near Kitakyushu: 3 MW (2019)

Near Fukushima, 14 MW (2015/2019)

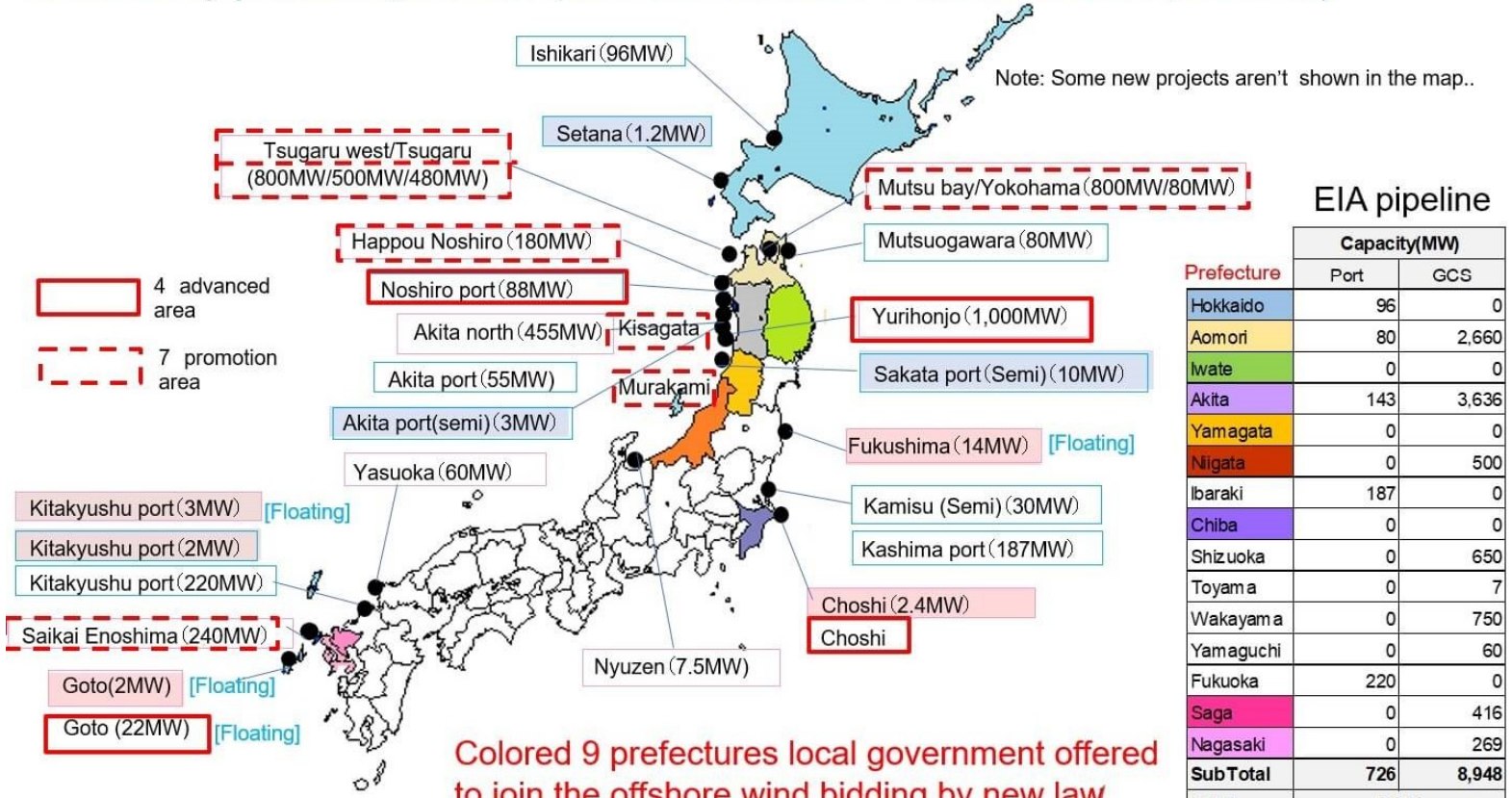
Background

Current Offshore Wind Power Projects in Japan

In operation by June 2019 : 67.6 MW (Port area 46.2MW + General area 21.4 MW)

National projects (originally) Commercial projects in operation

In the EIA pipeline : 9,674 MW (Port area 726 MW + General area 8,948 MW)



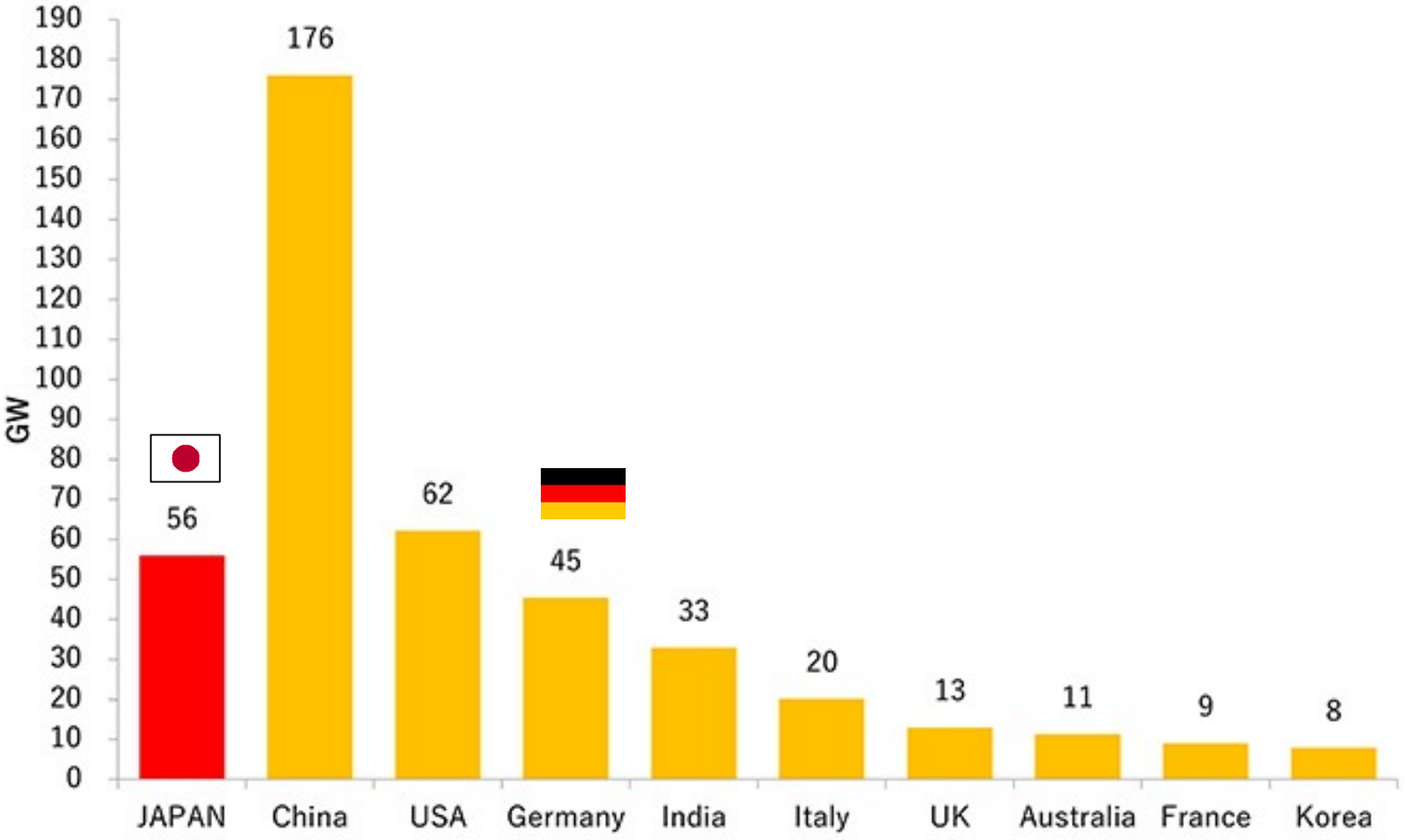
EIA pipeline

Prefecture	Capacity(MW)	
	Port	GCS
Hokkaido	96	0
Aomori	80	2,660
Iwate	0	0
Akita	143	3,636
Yamagata	0	0
Niigata	0	500
Ibaraki	187	0
Chiba	0	0
Shizuoka	0	650
Toyama	0	7
Wakayama	0	750
Yamaguchi	0	60
Fukuoka	220	0
Saga	0	416
Nagasaki	0	269
SubTotal	**726**	**8,948**
Total	**9,674**	

Source: Japan Wind Power Association

Background

PV: Installed capacity (cumulated) end of 2018 (in GW)



Source: IEA PVPS Snapshot of Global PV Market (2019)

Background

„Megasolar“ plants in Germany

Enerparc 8.6 MW Solarpark in Wismar (2011)

Canadian Solar 168 MW Senftenberg (2011)

ENFO AG 155 MW Solarpark Neuhardenberg (2012)

Open-space PV plants: 11 GW
à more than 25% of total installed capacity

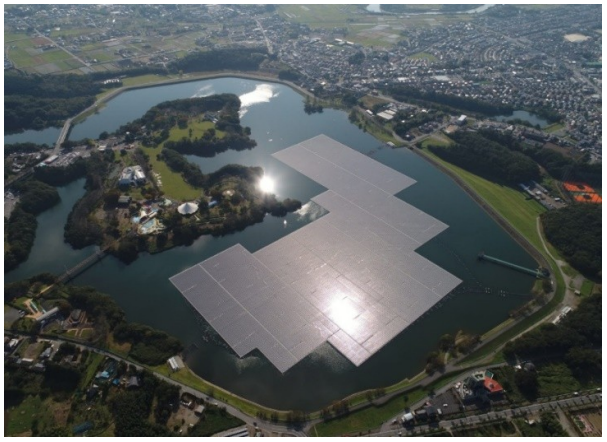
Source: Agency for Renewable Energies (AEE), Germany (2019)

Background

„Megasolar“ plants in Japan

Toshiba 25 MW PV plant in Miyazaki

Kyocera 78 MW Kagoshima Bay



Kyocera 14 MW Yamakura dam

Open-space PV plants: 14.56 GW
à more than 32% of total installed capacity

Source: Renewable Energy Institute (REI), Japan (2019)

Background

Renewables and EIA

- To achieve a relevant share of RE in the energy mix, large-scale projects such as wind farms and megasolar plants are necessary
- This development is closely linked to the question of environmental compatibility and social acceptance.
- The preconditions and procedure of environmental impact assessments (EIA) gain higher relevance against this background.

Environmental Impact Assessment

Definition

- The aim of the Environmental Impact Assessment (EIA) is to assess the extent to which a project endangers the environment and the health of the people concerned before it is approved.
- The aim is to avoid, reduce or compensate foreseeable damage.
- An essential feature is the possibility for the affected citizens to get involved in the decision-making process. In this way, possible resistance can be reduced and acceptance increased.

Environmental Impact Assessment

Legal Basis

Japan	Germany
Environmental Impact Assessment Act First implemented in 1999	Environmental Assessment Law (UVPG) First implemented in 1990
Environmental Impact Assessment Ordinances (local governments)	Federal Immission Control Act (BImSchG)
Land-use planning committes on city government level	Land-use plan of Federal States / Municipalities

Legal Basis for EIA – Wind

Japan	Germany
WTGs with capacities of > 10MW Ø „Class 1“ projects Ø EIA required	Construction of ≥ 20 WTGs Ø EIA required
WTGs with capacities of ≥ 7.5 MW and < 10 MW Ø "Class 2" projects Ø subject to EIA, if deemed necessary after prior review	Wind farms with ≥ 6 wind turbines (> 50 m total height) Ø general preliminary EIA assessment
WTGs with capacities of < 7.5MW EIA required in some prefectures	Wind farms with 3-5 wind turbines Ø site-related preliminary EIA assessment
	1-2 wind turbines (> 50 m) Ø simplified approval procedure can be carried out without an EIA

Legal Basis for EIA – Open-Space PV

Japan	Germany
Since April 1st, 2020: Megasolar projects of ≥ 40 MW Ø "Class 1" Ø subject to EIA	PV ground-mounted systems are not subject to an EIA
Megasolar projects of ≥ 30 MW Ø "Class 2" Ø subject to EIA, if necessary after prior review	Local government checks space and environmental impact; open space must be changed to "special solar zone" in the land-use planning.
Megasolar projects of < 30 MW Ø Subject to EIA in some prefectures	

Environmental Impact Assessment

Who is involved?

- Project Proponent

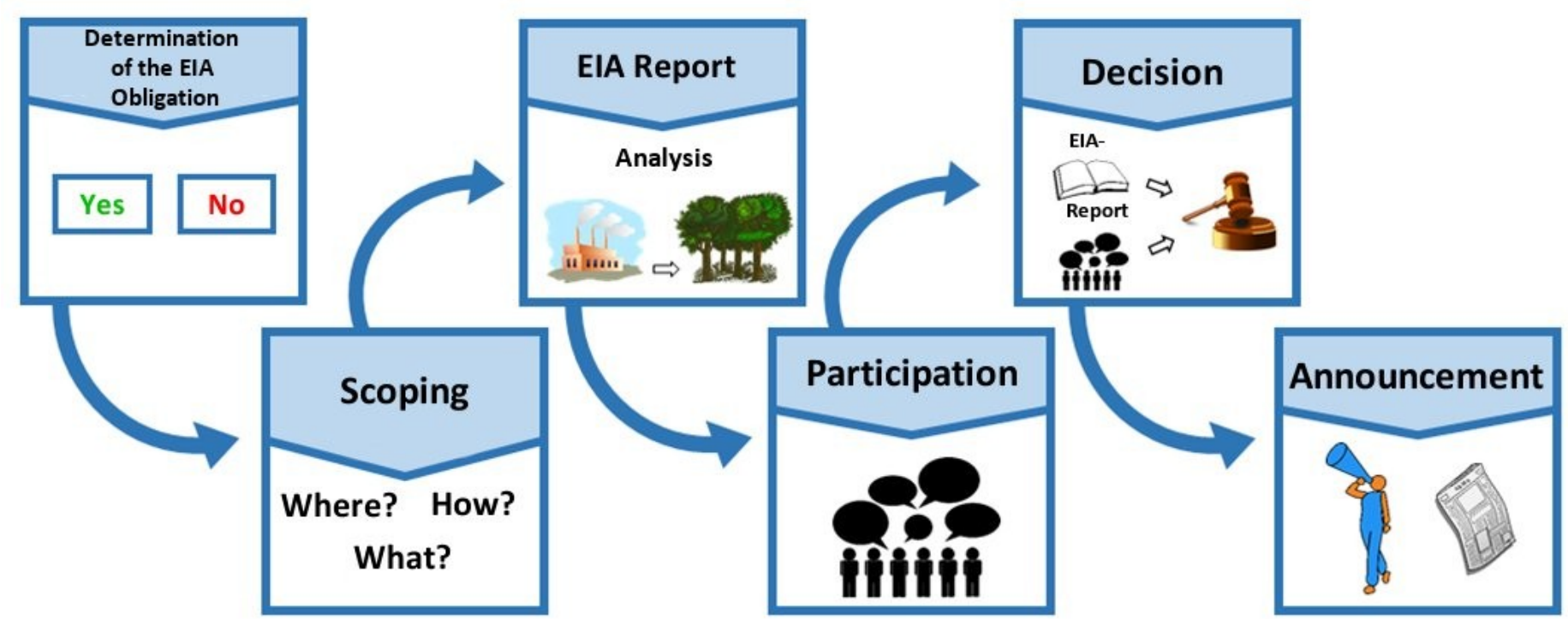
- Approving Authorities

- Residents / Public

Environmental Impact Assessment

Way of Implementation in Germany

Process of an EIA in Germany



Source: German Federal Environmental Agency (UBA)

Environmental Impact Assessment

Way of Implementation in Germany

Information on project

Project application/
EIA report

Project implementation

Decision whether EIA is required

Decision on socpe and method of the EIA (Scoping)

Check of the EIA Report

Participation of public

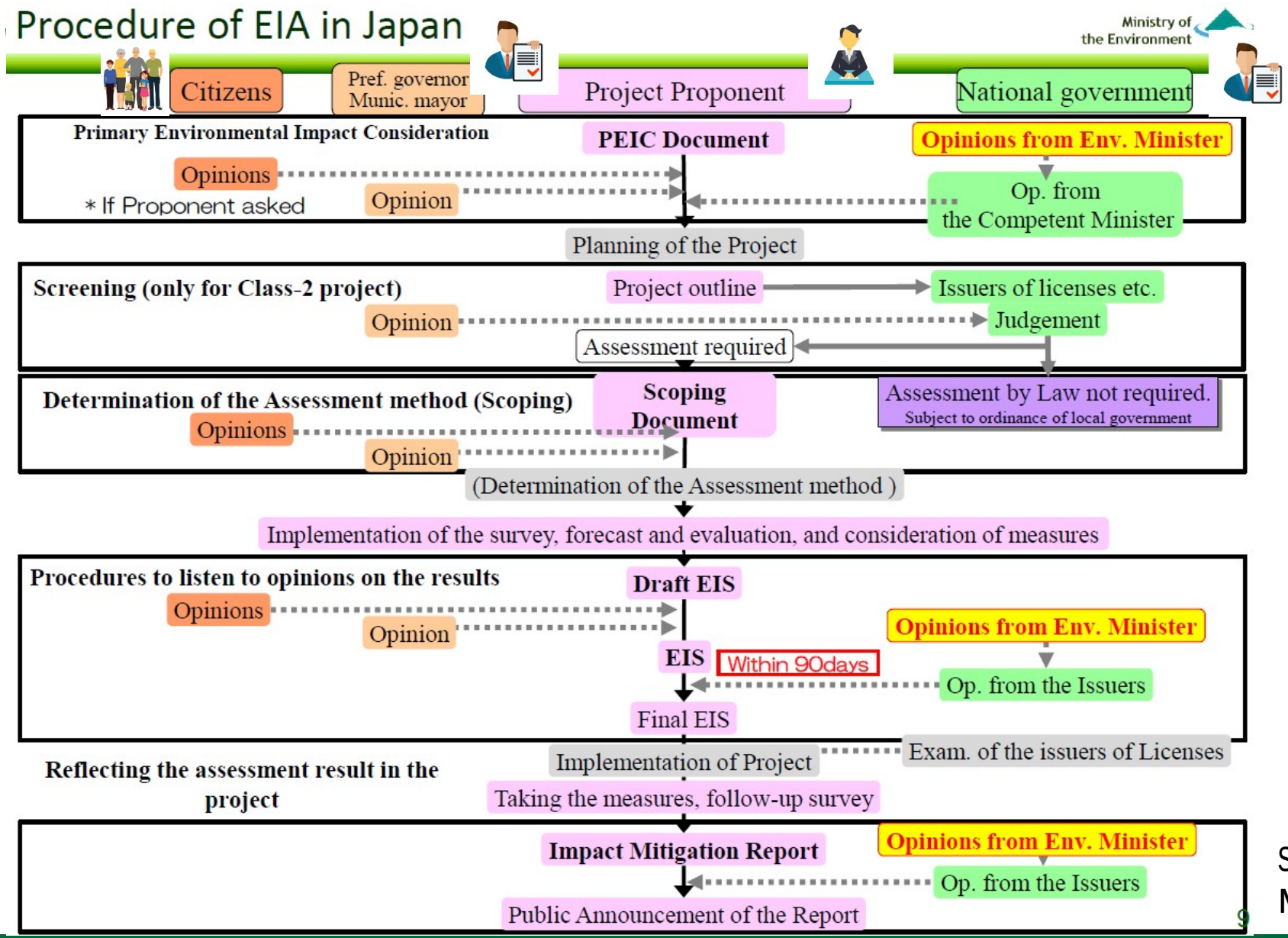
Summarized description of impacts and requested measures

Approval of the EIA Report

Monitoring

Source: German Federal Environmental Agency (UBA)

Environmental Impacts Assessment



Source:
MoEJ (2019)

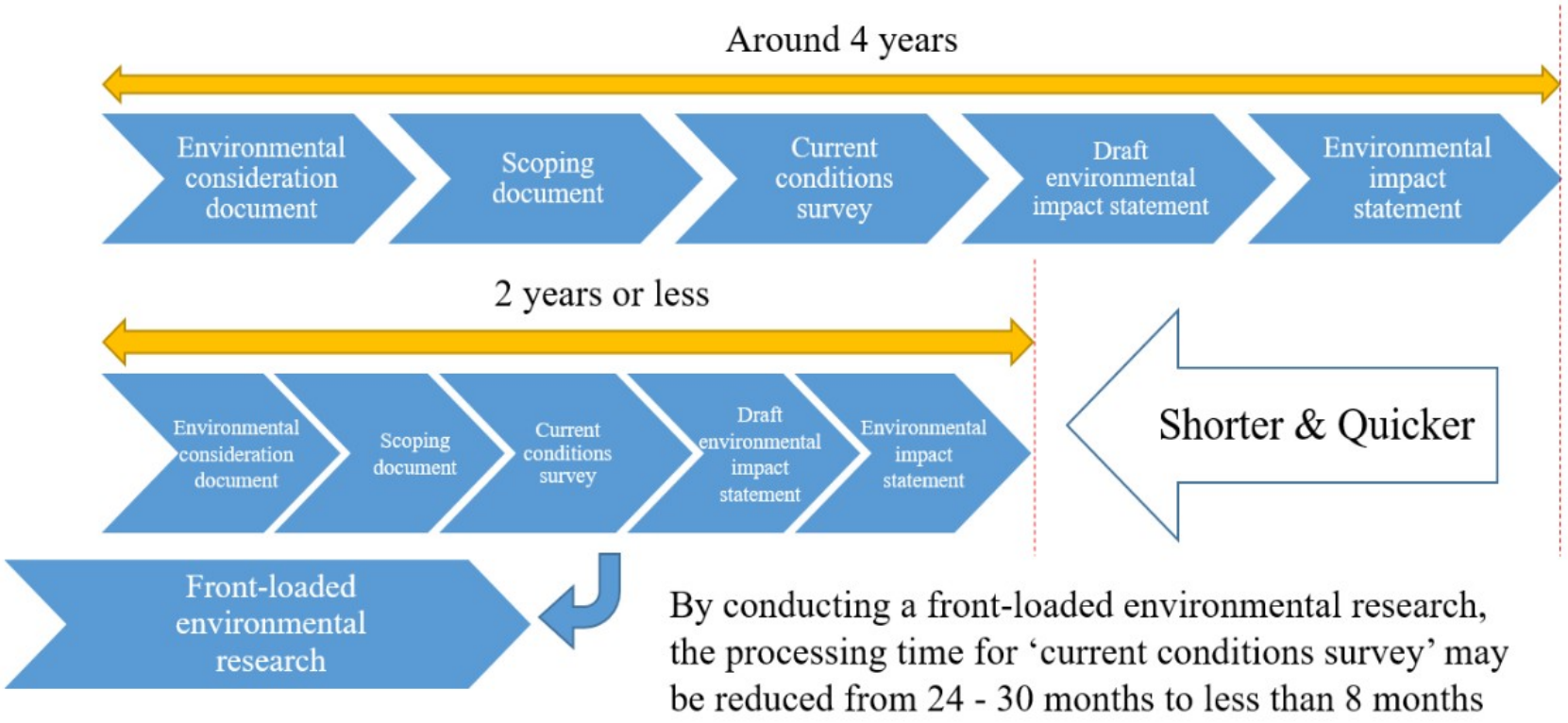
Environmental Impact Assessment

Duration period

- Germany: overall approval procedures for onshore wind turbines takes about 3 years, including EIA (around 18 months).
- Japan: Average duration between 36-48 months; median: 3.6 years

Environmental Impact Assessment

Plans to shorten EIA procedure in Japan



Source: MoEJ (2017)

Summary / Points for Discussion

- In Germany as well as in Japan, there are specific challenges for the large-scale expansion of Renewables.
- EIA can be an obstacle for fast expansion of Renewables; On the other hand, it is important for environmental protection and social acceptance.

à How can the balance between hindering and promoting effect can be improved?

à How much public participation is necessary? Is it crucial for the acceptance of new RE projects?

à What else would help to increase public acceptance and to fasten the expansion of RE?

Q&A Session

Takahiro Hosokawa

Environment & Energy Technology Dept., Asia Air Survey Co., Ltd.

Lars Langeleh

Financing & Sales, WestWind ENERGY

Upcoming Events

Key results, lessons learnt and perspectives of the German-Japanese Energy Transition Council (GJETC) in the light of the Corona Crisis

German Japanese Energy Transition Council

Webinar, 2nd July 2020, 10:00-11:30 CEST / 17:00 – 18:30 JST

11th German-Japanese Environment & Energy Dialogue Forum (EEDF)

17/18 February 2021, Berlin (tbc)

Thank you for your attention!

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