

Status of Renewable Energies in Japan

August, 2017

Institute for Sustainable Energy Policies

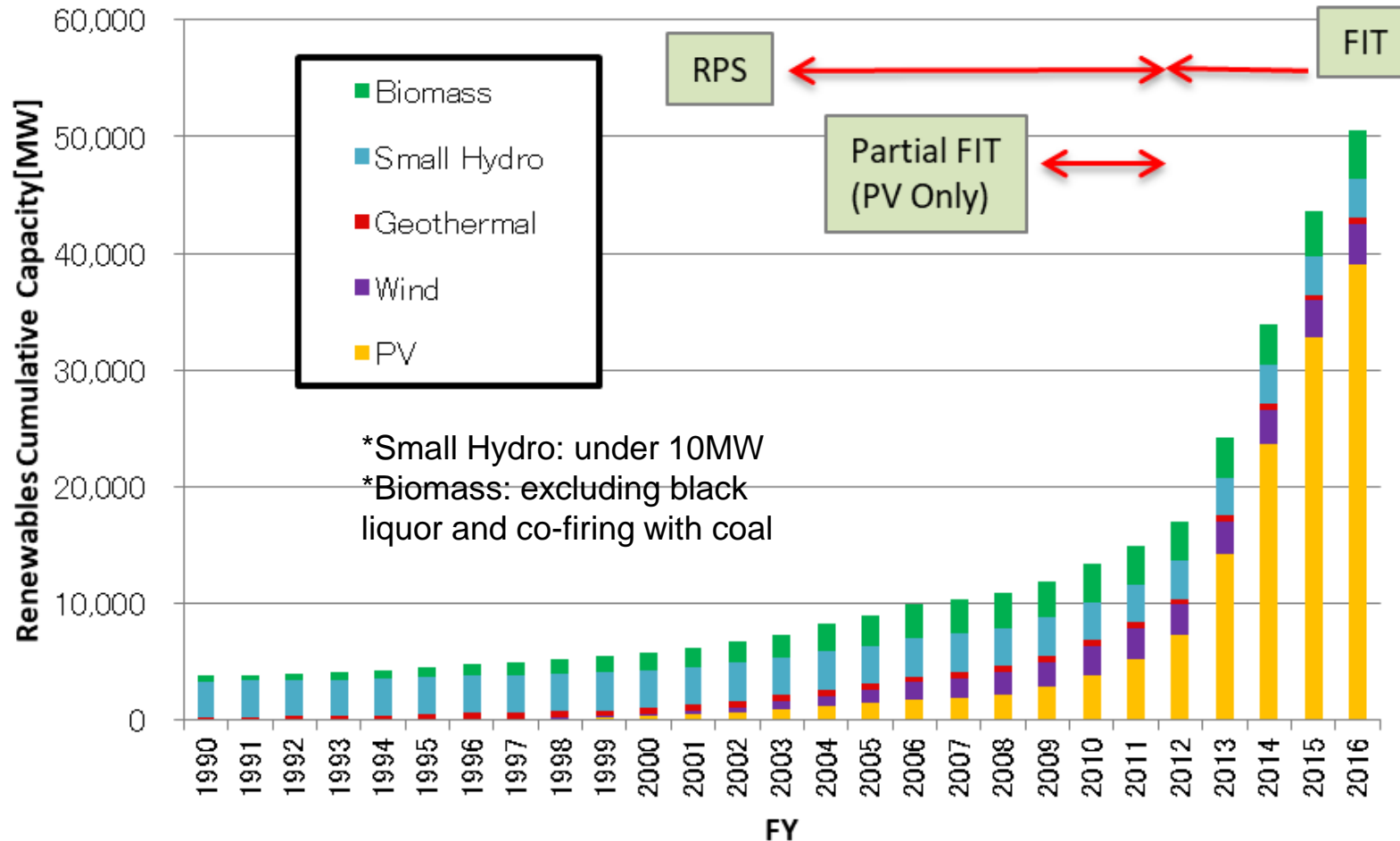
Tokyo, Japan



<http://www.isep.or.jp/en>

Trends of Renewable Energy Capacity in Japan

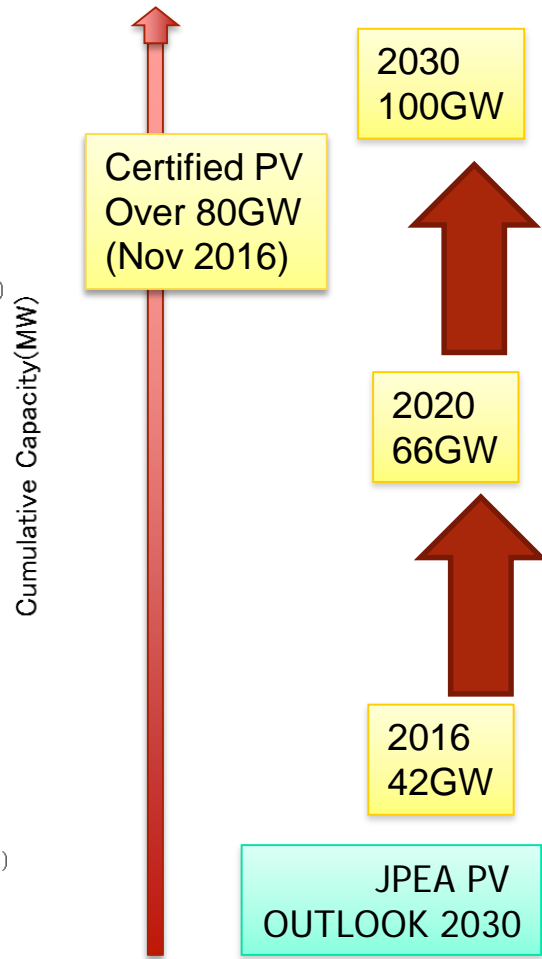
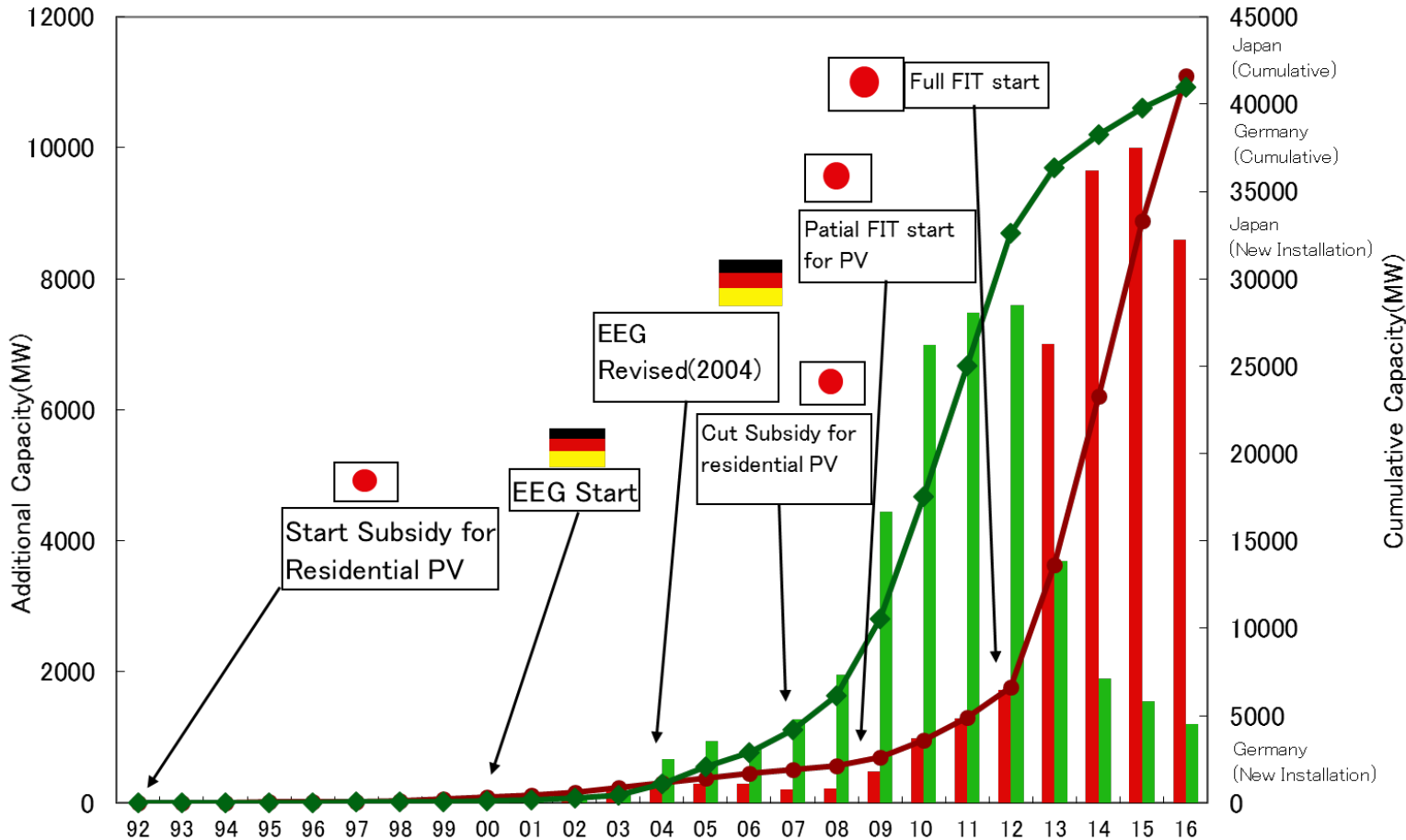
Trends of Renewable Energy Capacity in Japan(excluding large hydro): 50GW(FY2016)



Source: Renewables Japan Status Report (ISEP)

Trends of Solar PV in Japan and Germany

- Expanded introduction of Solar PV in Japan and Germany
- Since 2013, trend of additional capacity is dramatically changed in Japan and Germany.

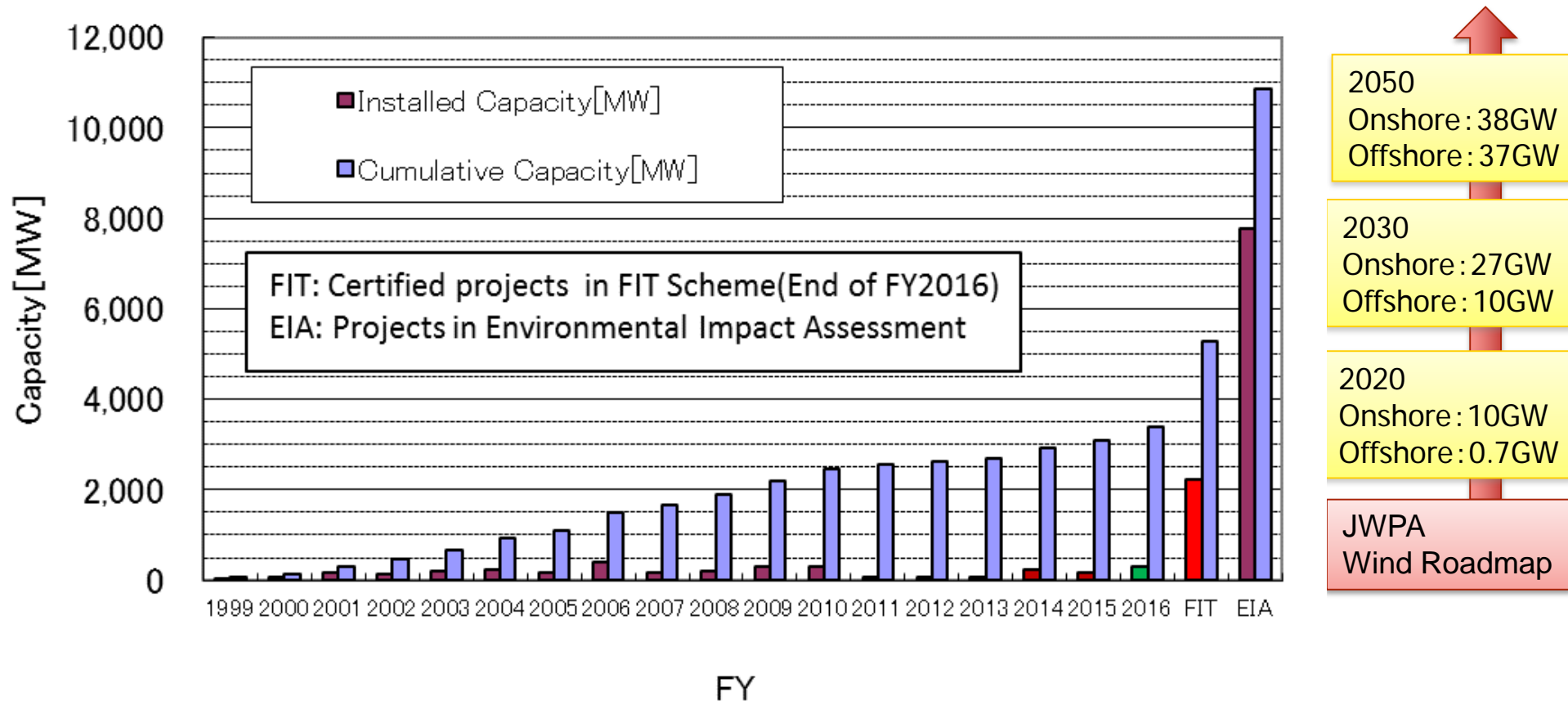


Source data: IRENA data

Graph: ISEP

Trends of Wind power capacity in Japan

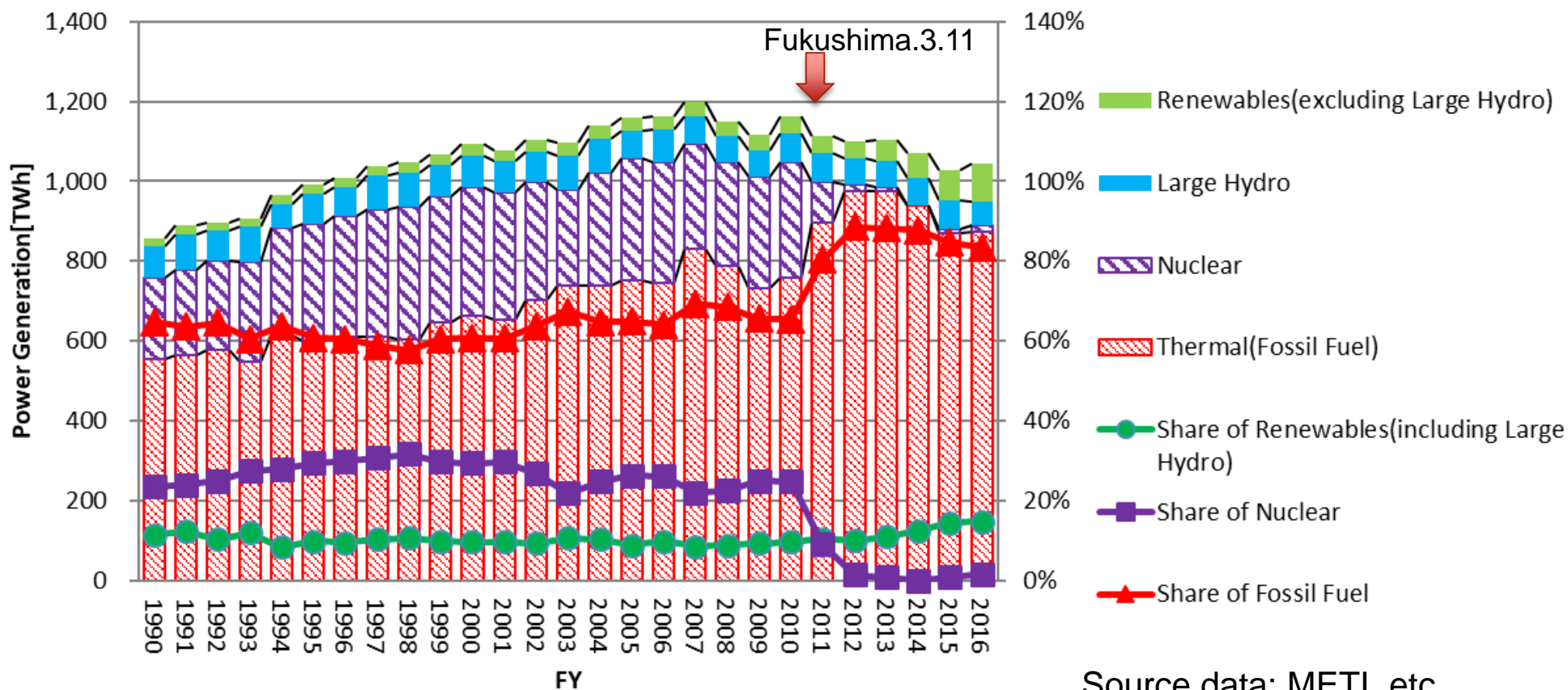
- After FY2011, annual installed capacity keeps very low level because of several regulation.
- Pipeline of environmental assessment is over 7GW including certified wind capacity is over 2GW



Trends of Power Generation in Japan

- Ratio of renewable energy is 10% which remained unchanged for the past two decades
- Ratio of renewable energy power generation increased to 14.8% in FY2016.

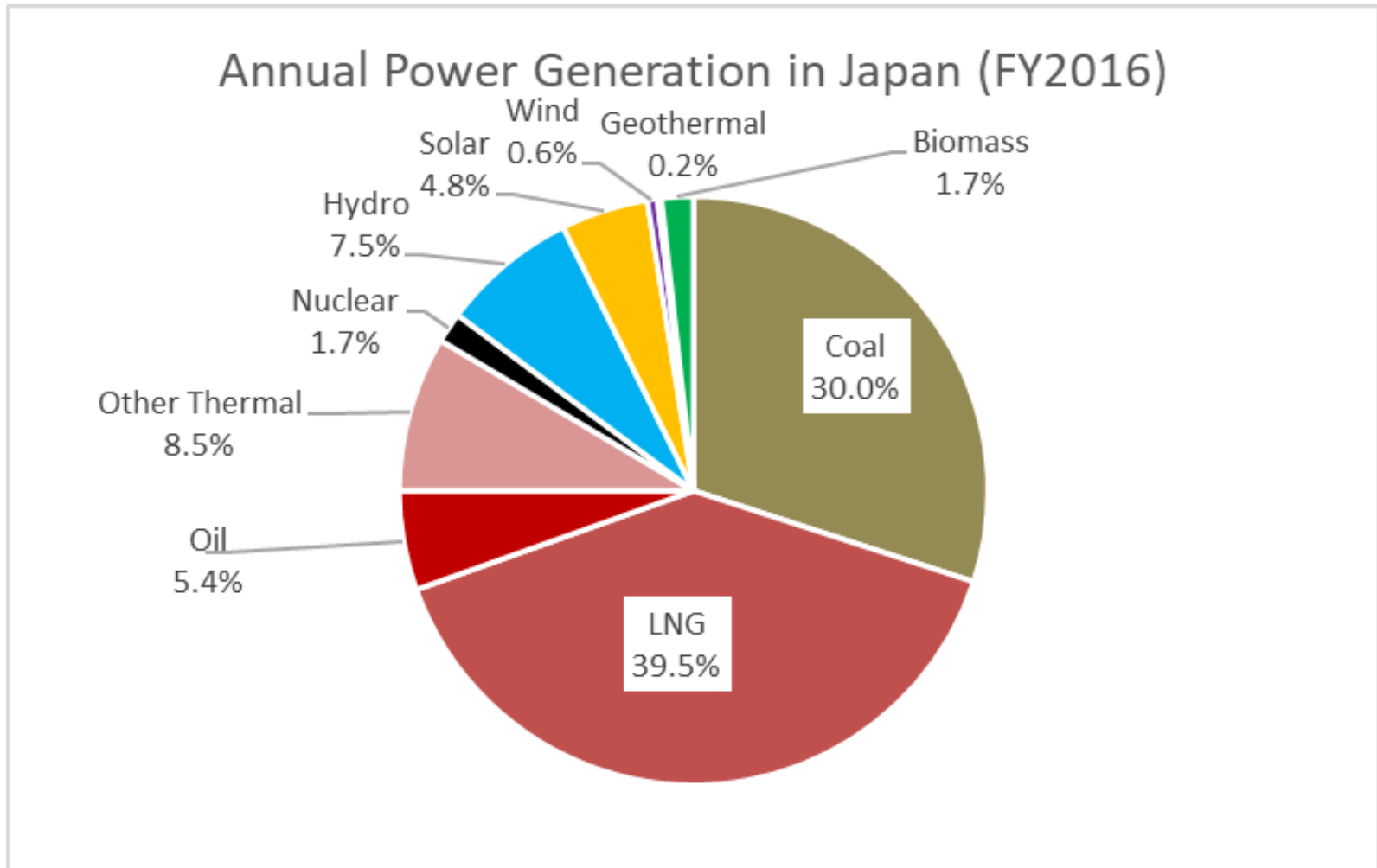
Power Generation in Japan(FY1990 - 2016)



Source data: METI, etc.
Graph: ISEP

Share of Power Generation in Japan (FY2016)

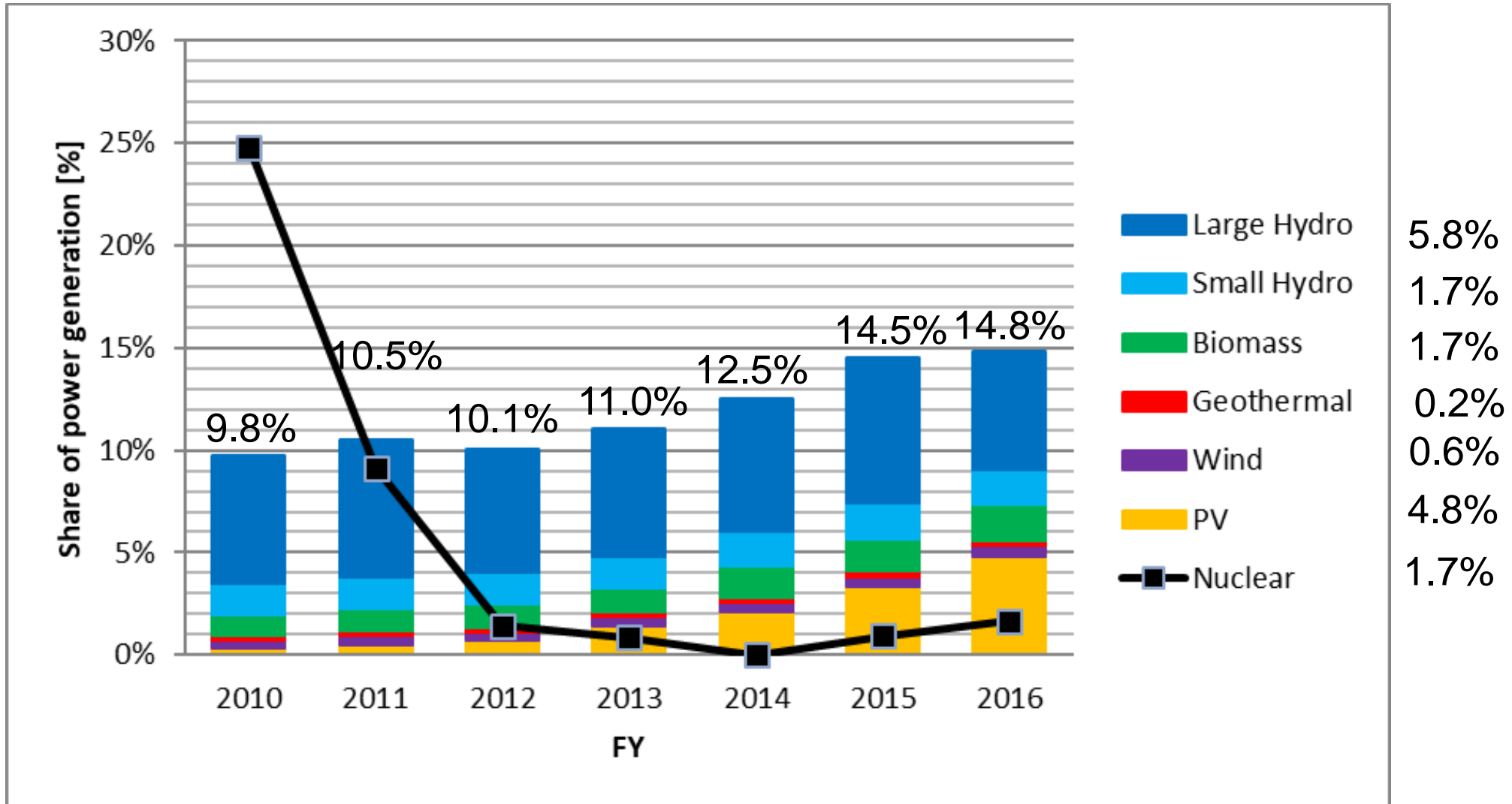
- Share of Renewable Energy reaches almost 15% of power generation in Japan
- VRE share is 5.4%(Solar PV 4.8%) of annual power generation in FY2016



Source: Estimated by ISEP using METI data

Trends of Renewable Power Generation in Japan

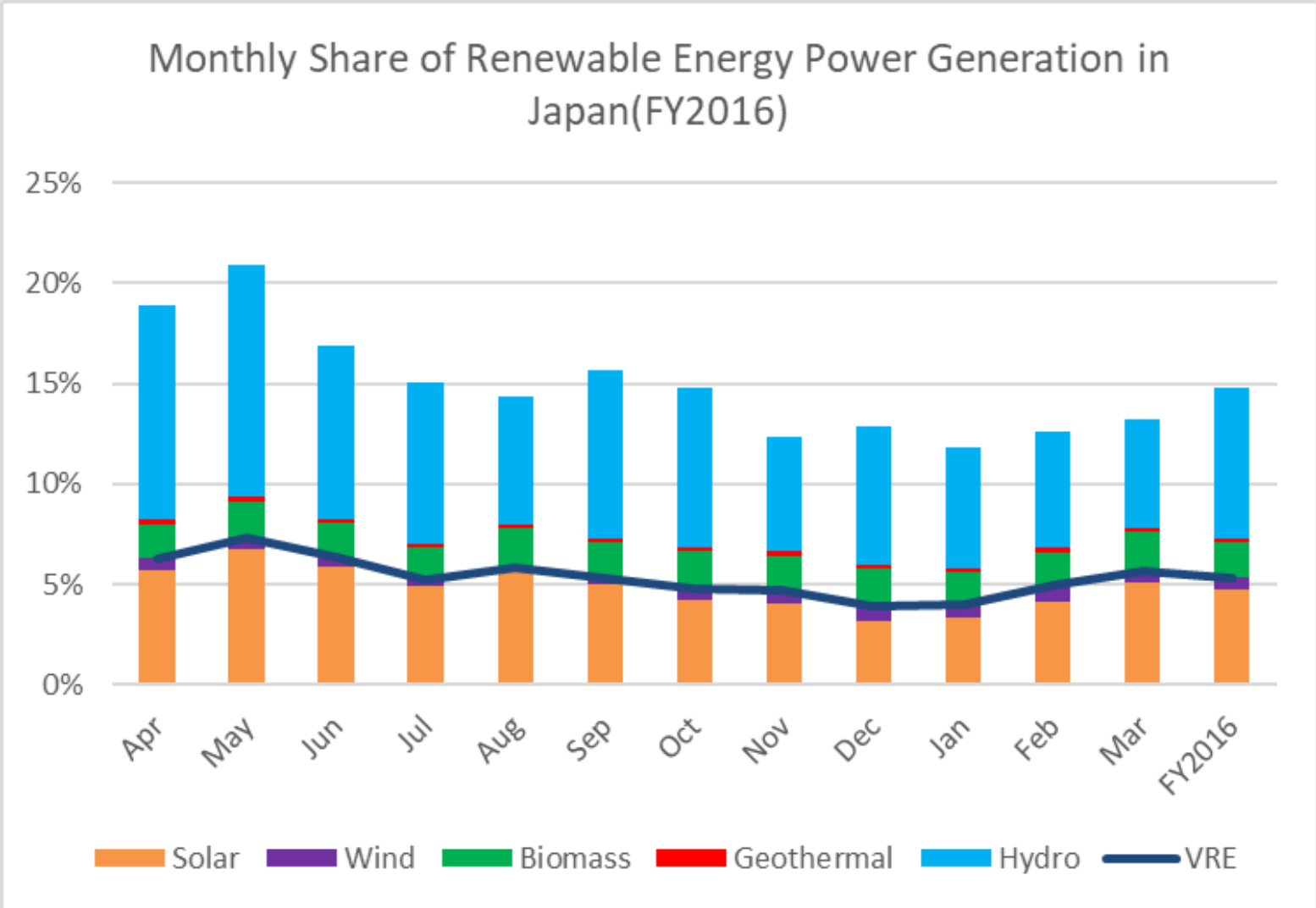
Share of renewable energy power generation increased to 14.8% in FY2016.



Source: METI, ISEP(Renewables Japan Status Report)

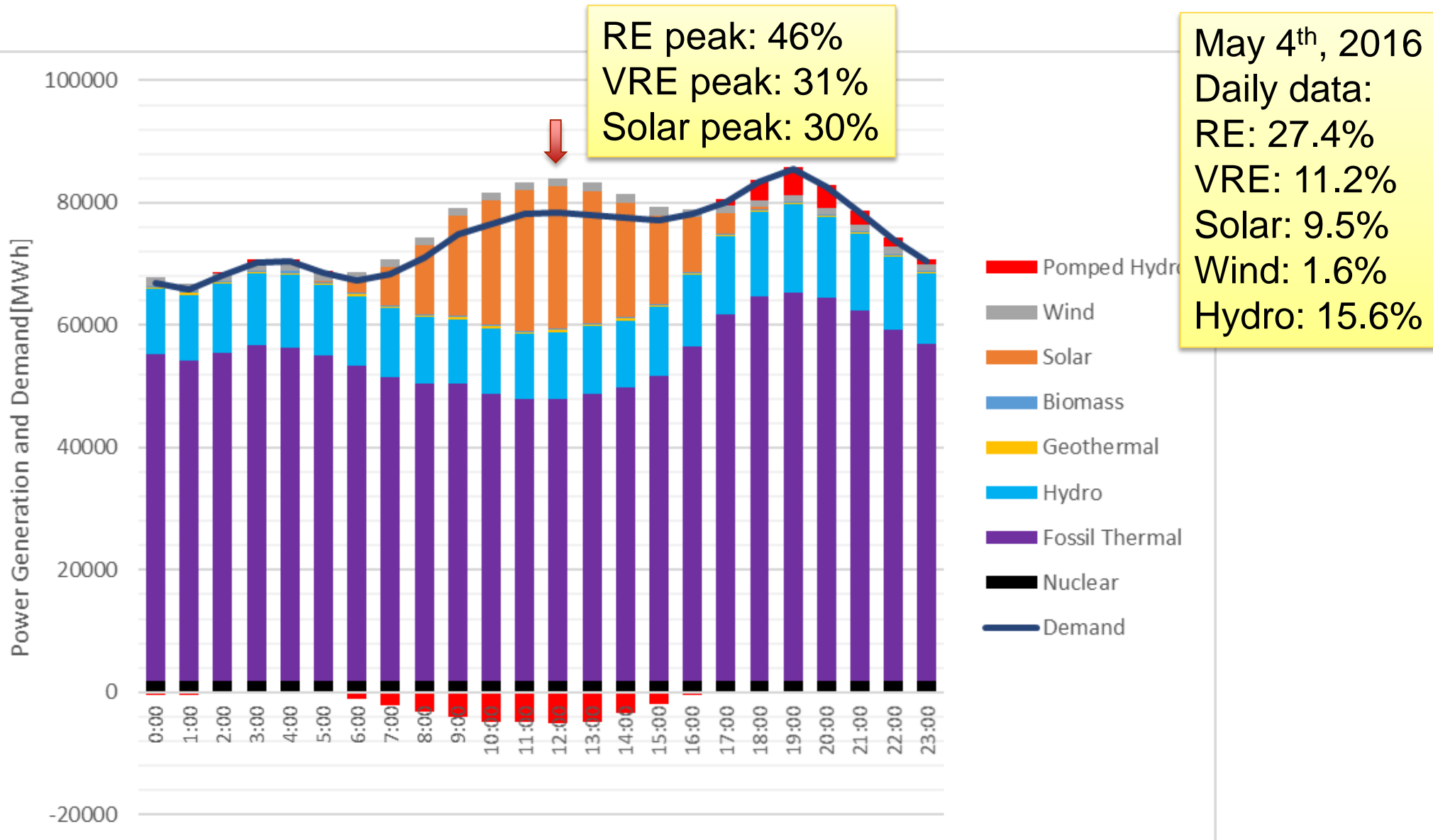
Monthly share of renewable energy power generation in Japan

- RE Share was over 20% and VRE share rised up to over 7% in May, 2016



Source: Estimated by ISEP using METI data

Demand and Supply during a day (4th May, 2016) in Japan



Source: ISEP using each utility data

Economical effects of FIT scheme in Japan

Renewable Share: 9%(excluding large hydro)

Renewables
(PV, Wind, Geothermal,
Hydro, Biomass)

Tariffs for electricity

employment: 310,000
(IRENA)

2300B JPY

**Priority
Access**

**Power
Producers**

Electricity

**Electric
Utilities**

Electricity

**Investment,
Loan**

**Capacity
Investment**

57TWh

800TWh

Financial
Institution

Power Facility

Avoidable Cost:
500B JPY

2.25 JPY/kWh

**Electricity Price
(Surcharge)**

1800B JPY

Estimation
for FY2016

Home
(Regulated)

Company
(Office,
Industries,
Etc.)

Investment(2016): 16Billion USD
(Total investment for clean energy
in Japan) estimated by UNEP

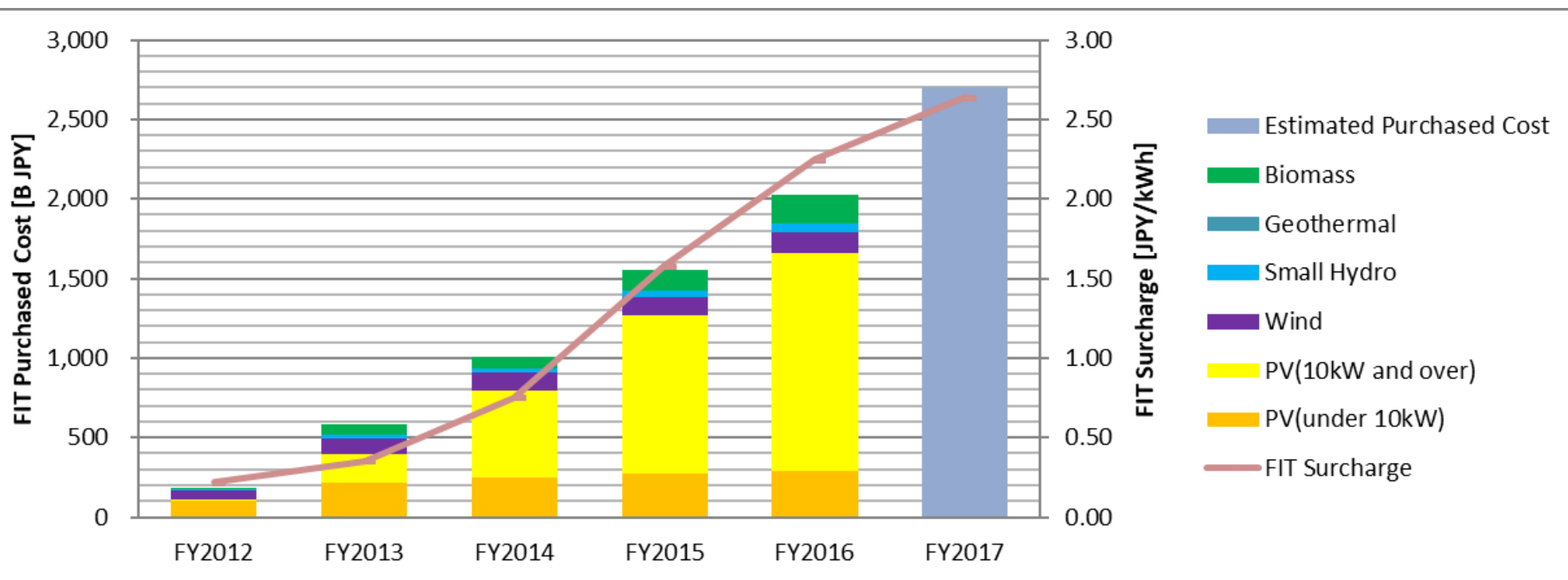
April, 2015 – March, 2016

Electric Consumer

Source Data: METI, Estimation by ISEP

Trends of Purchased Cost by FIT scheme in Japan

- Purchased cost for FIT scheme is increasing to over 2000 Billion JPY in FY2016
- Purchased cost is estimated to over 2500 Billion JPY in FY2017
- Surcharge for FIT scheme is set to 2.64 JPY/kWh in FY2017

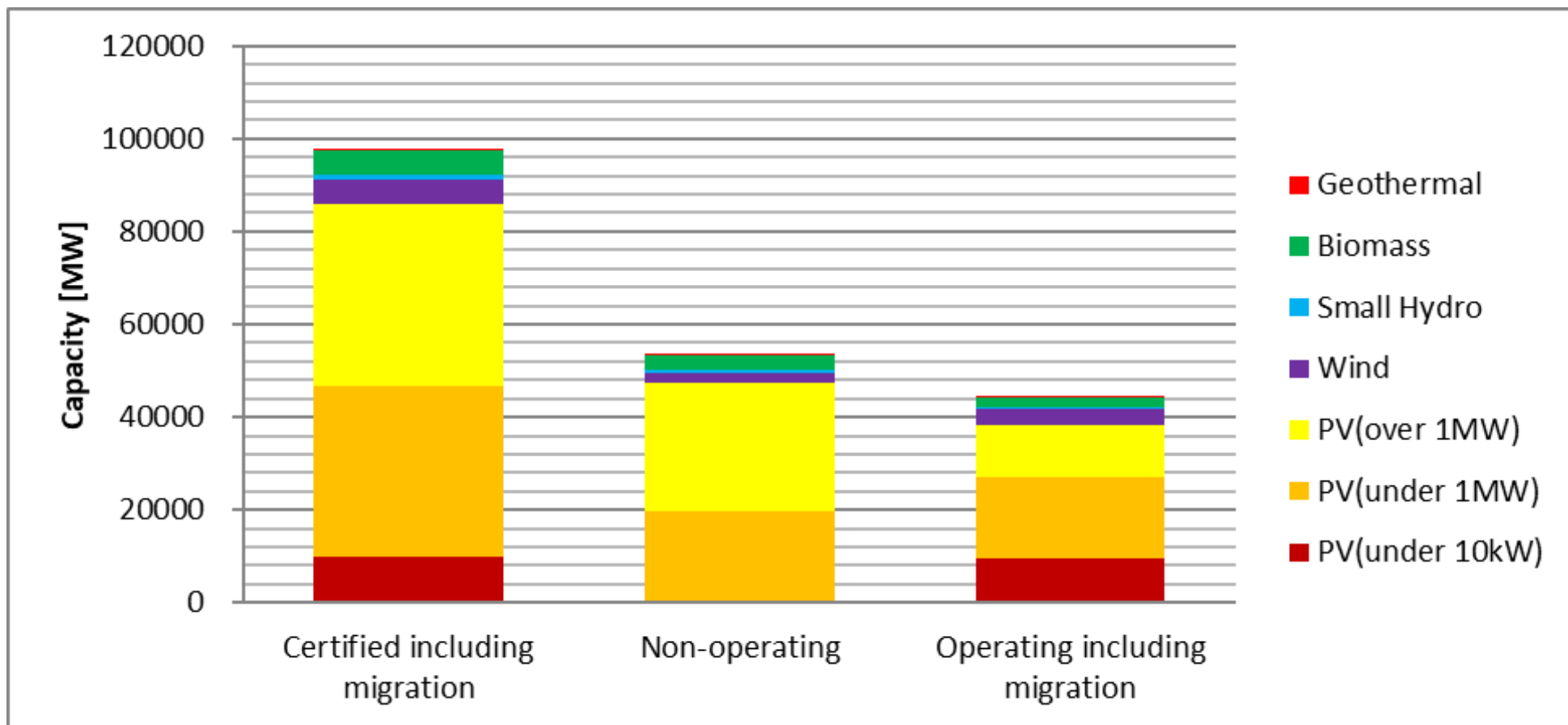


Source data: METI

Graph: ISEP

Status of FIT in Japan (as of March 2017)

- Cumulative capacity of certified facilities is nearly 98GW until March, 2017 including migration from RPS.
- PV capacity is 88%(86GW) of certified facilities. And certified large PV over 1MW is 39GW(40%)
- Operating facilities are 32%(35GW) of certified facilities including migration by March 2017.
- 52% of Certified facilities(about 53GW) were non-operating by March 2017.

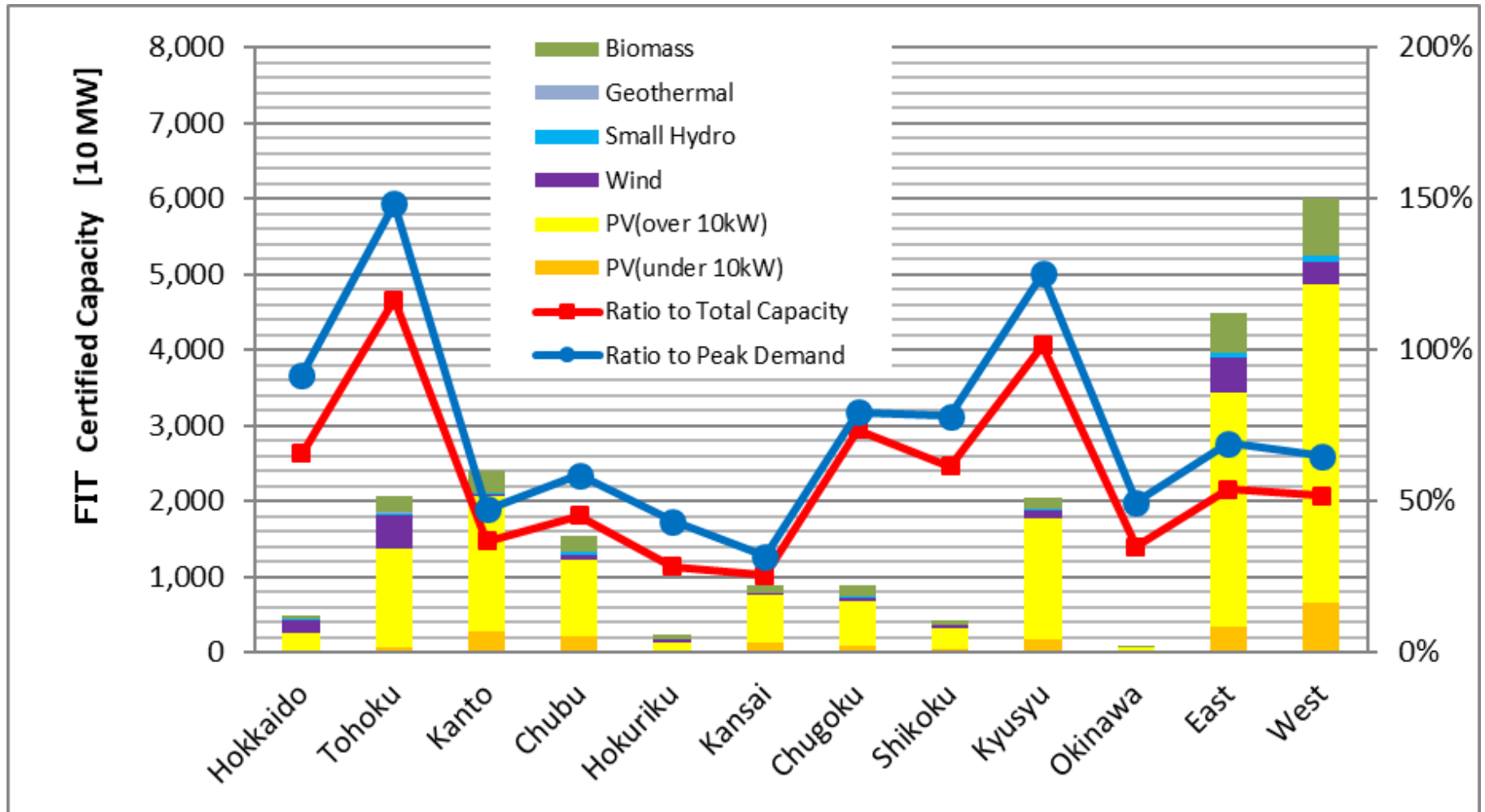


Source data: METI

Graph: ISEP

Status of FIT certified capacity in each utility

In Kyusyu and Tohoku region, certified capacity ratio to peak demand reaches 100%.

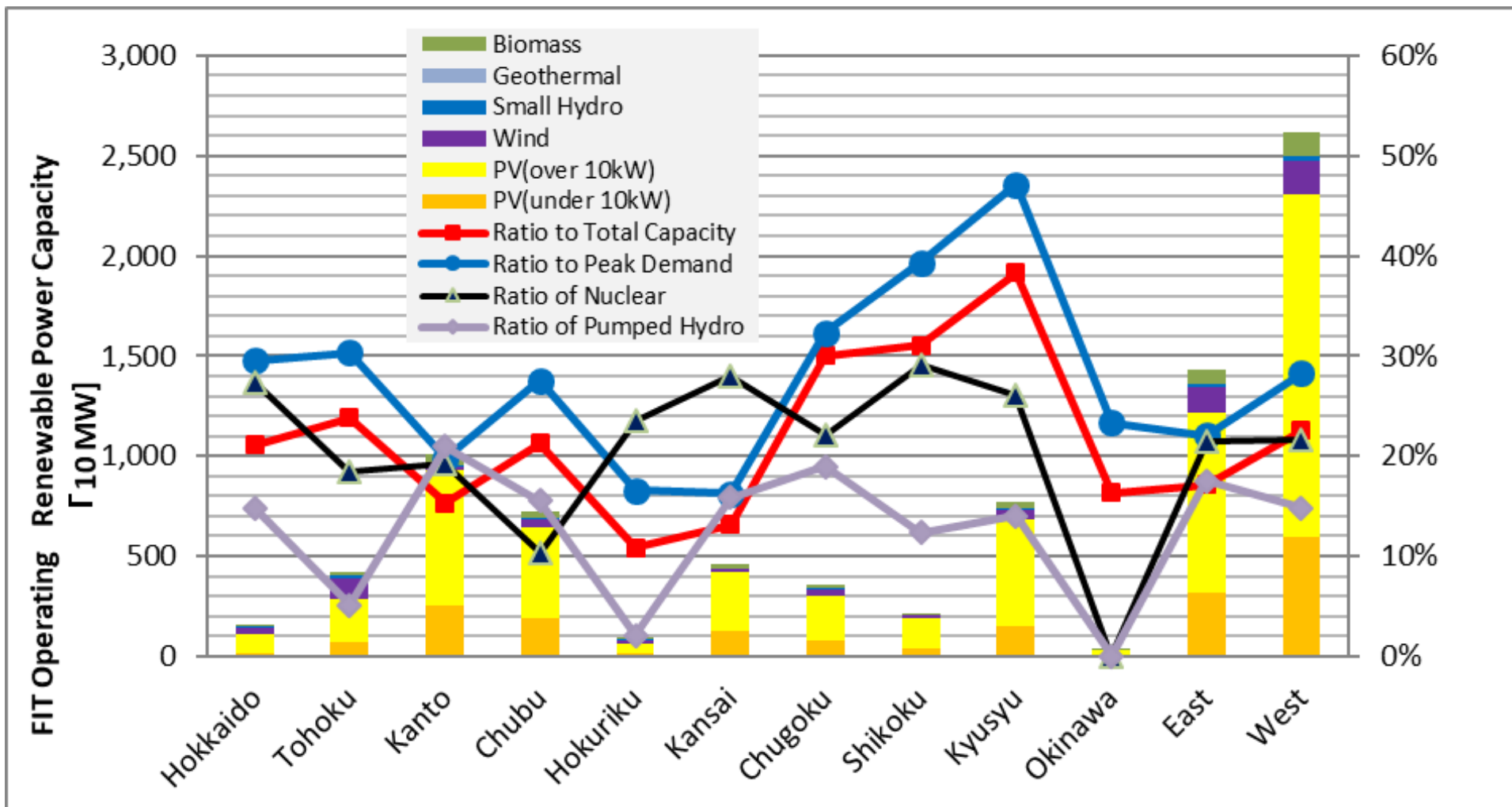


Source data: METI
Graph: ISEP

As of March 2017

FIT scheme: Operating Renewable power capacity in each utility

In kyusyu, operating renewable power capacity reaches 47 % of peak demand.



Source data: METI
Graph: ISEP

As of March 2017

Single-day Supply and Demand in Kyushu area (May 4th, 2016)

