

APEC EGNRET 38, Wellington, New Zealand

Update of Financial Incentives for Promoting New and Renewable Energy in Japan

June 18, 2012

Takao Ikeda
The Institute of Energy
Economics, Japan (IEEJ)



Takashi Ohshige
New Energy and Industrial Technology
Development Organization (NEDO)

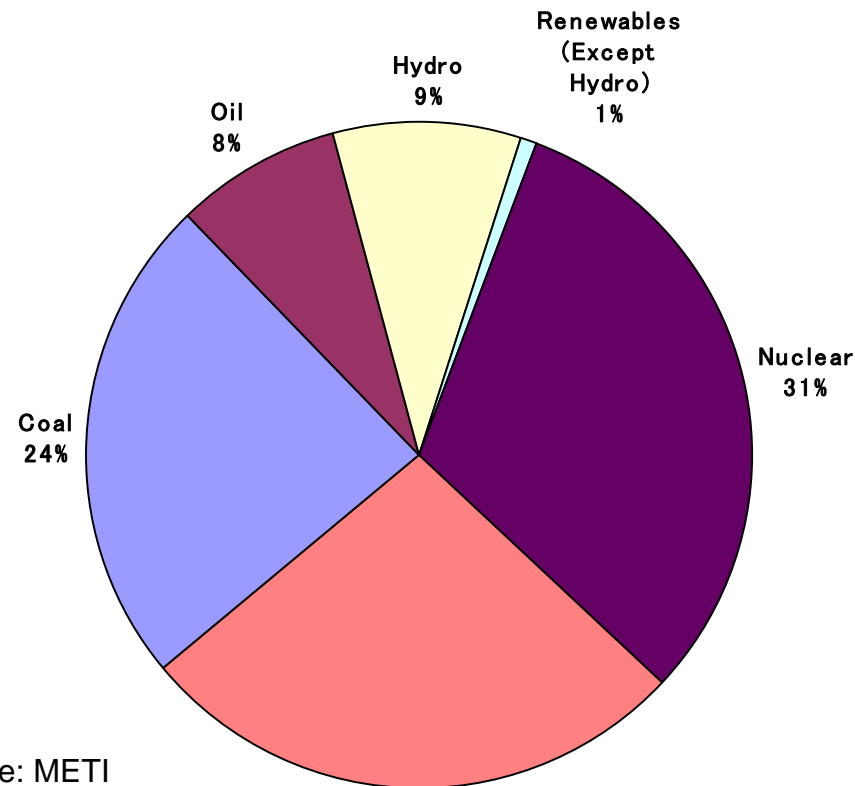


Power Generation from Renewable Energy



- Current Ratio of Renewable Energy in Power Generation Mix : 10.5%
- Previous (Current) Basic Energy Plan in June 2010 : About 20% in 2030
- Basic Energy Plan under discussion : About 25% in 2030 is considered as upper limit

Power Generation Mix in 2010



Source: METI

Outline



2003

[RPS \(Renewable Portfolio Standard\)](#)

- wind, solar, small hydropower, biomass power generation , binary geothermal
- 8-year target set by every 4 years

2009 Nov

[Buyback surplus PV electricity from residence](#)

- Developed from Utilities' voluntary Net metering system

2011 Aug

[Passage of FIT Law](#)

2012 Apr

[Proposal from the Advisory Committee](#)

- Proposal from Advisory committee for the purchasing rate and the duration

2012 May

[Public Comment](#)

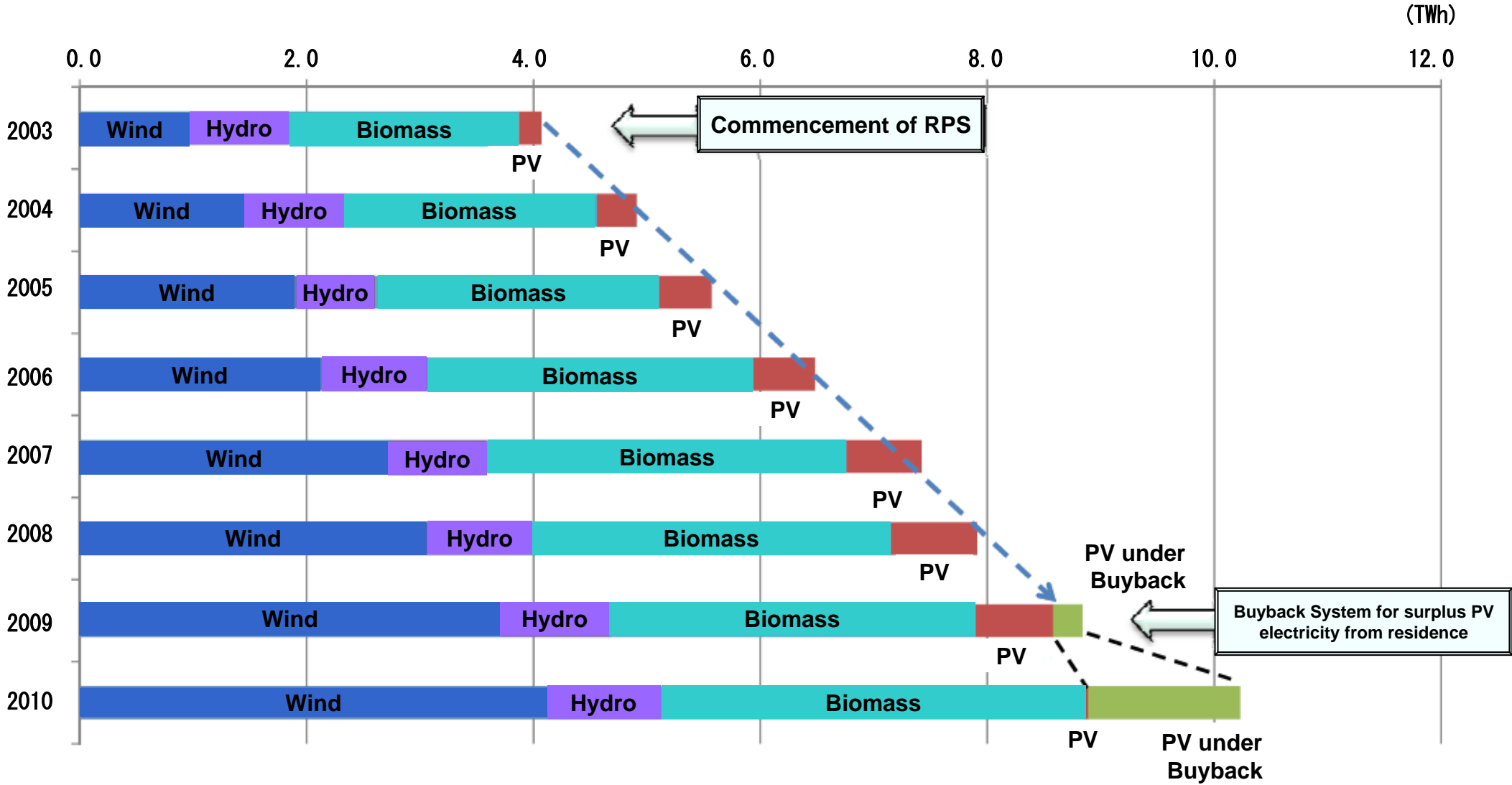
- From May 16 to June 1

2012 Jul

[Commencement of FIT](#)

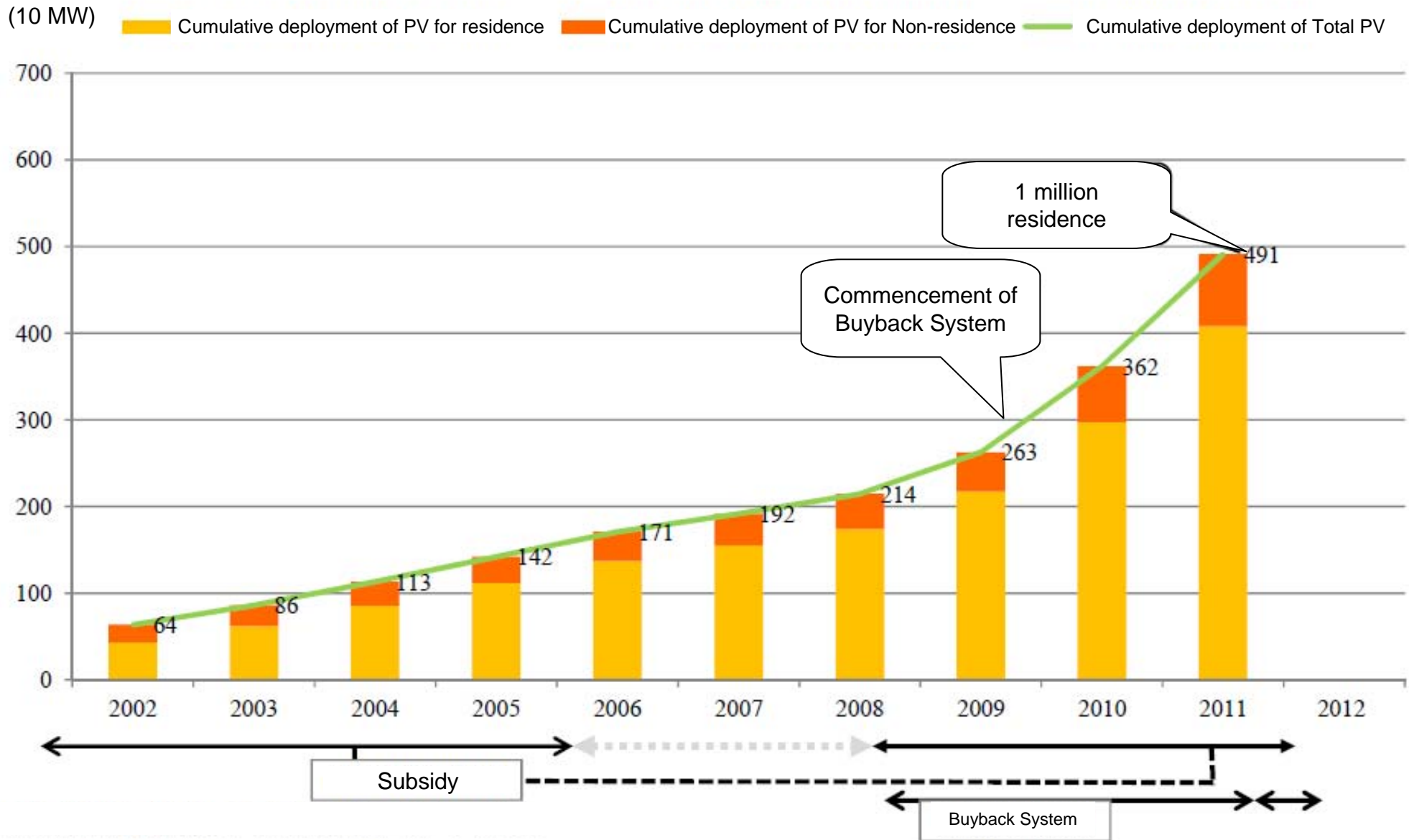
- Start from July 1

Renewable Energy Purchased by Utilities



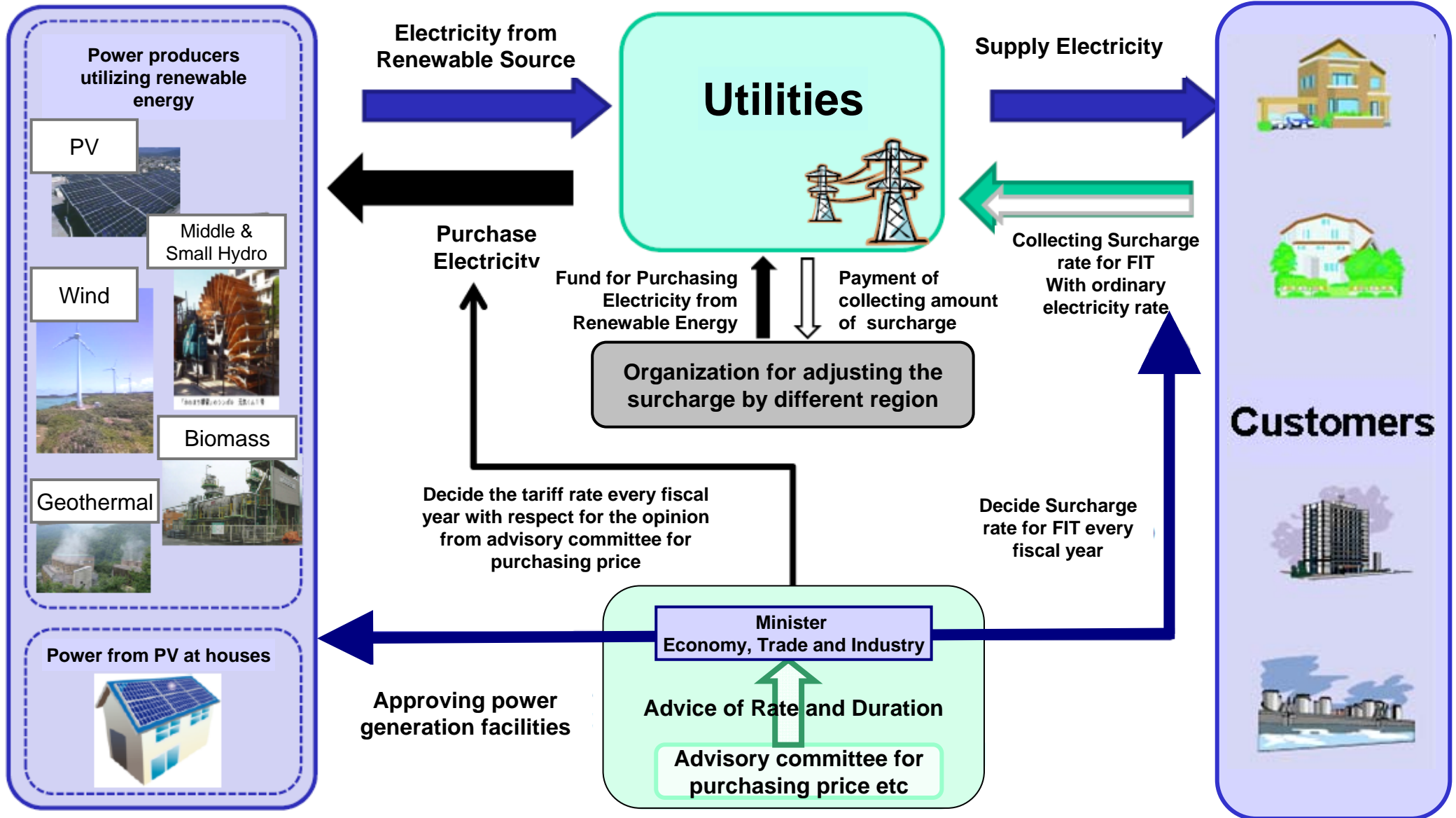
Source: METI

Cumulative PV deployment capacity



Source: Japan Photovoltaic Energy Association (JPEA)

FIT Basic Scheme



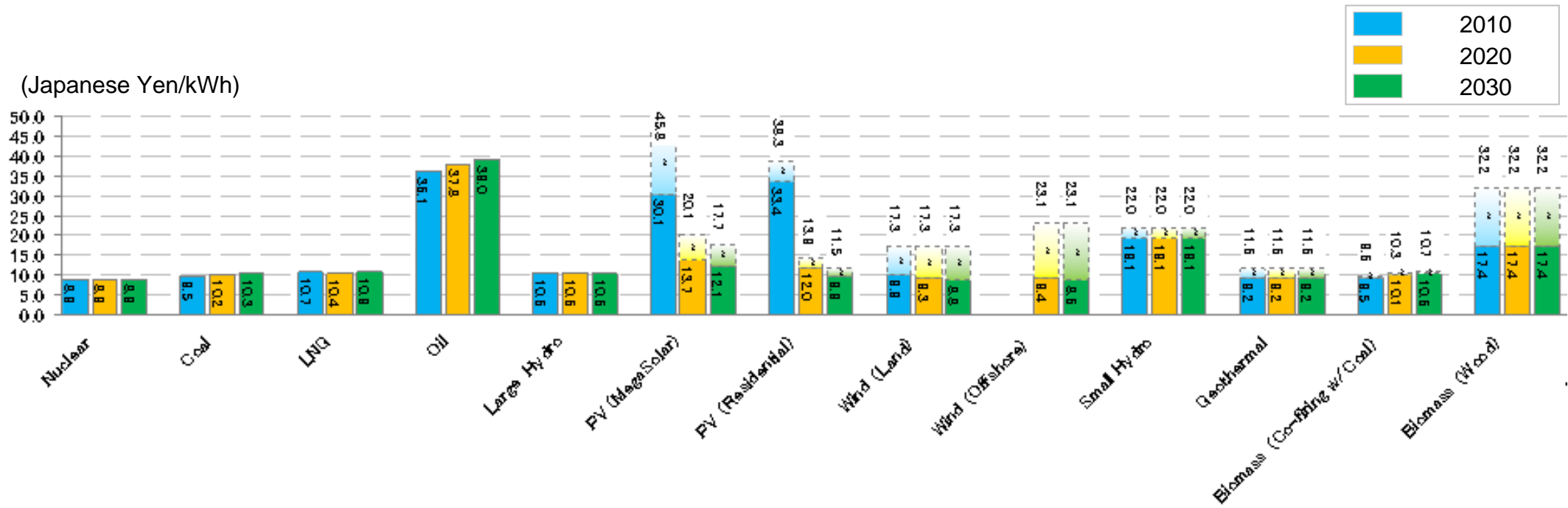
Major Revision by Energy Source



	RPS (PV: Buyback)	Feed in Tariff
PV	Under about 500kW	No Limitation by Capacity
Wind	-	-
Hydro	Under 1MW	Under 30MW
Geothermal	Only Binary Cycle power plant	No Limitation (Including Flash Steam Plant)
Biomass	No category	Differentiate the purchase rate by category

Source: METI

Electricity Cost Estimation in Japan



Source: National Policy Unit, Cabinet Secretariat
http://www.npu.go.jp/policy/policy09/archive02_shisan_sheet.html

Proposed Tariff



Renewable Energy		PV		Wind		Geothermal		Middle and Small Hydro		
Classification (Plant Size)		≧10kW	<10kW (Surplus)	≧20kW	<20kW	≧15,000kW	<15,000kW	30,000kW> ≧1,000kW	1,000kW> ≧200kW	<200kW
Cost	Initial Cost (Thousand JPY/kW)	325	466	300	1,250	790	1,230	850	800	1,000
	Operation Cost (Thousand JPY/kW)	10	4.7	6	-	33	48	10	69	75
IRR(Before Tax)		6%	3.2%	8%	1.8%	13%		7%	7%	
Tarriff (JPY/KWh)	With Tax	42.00	42(*)	23.10	57.75	27.30	42.00	25.20	30.45	35.70
	Without Tax	40	42	22	55	26	40	24	29	34
Duration(Years)		20	10	20	20	15	15	20		

Renewable Energy		Biomass						
Kind of Biomass		Gasification (Sewage)	Gasification (Livestock Excreta)	Solid Fuel (Unutilized Wood)	Solid Fuel (General Wood)	Solid Fuel (General Waste)	Solid Fuel (Sewage)	Solid Fuel (Recycled Wood)
Cost	Initial Cost (Thousand JPY/kW)	3,920		410	410	310		350
	Operation Cost (Thousand JPY/kW)	184		27	27	22		27
IRR(Before Tax)		1%		8%	4%	4%		4%
Tarriff (JPY/KWh)	Classification	Gasified Biomass by Methane Fermentation		Unutilized Wood	General Wood (Incl. Palm EFB)	Waste Biomass (Other than Wood)		Recycled Wood
	With Tax	40.95		33.60	25.20	17.85		13.65
	Without Tax	39		32	24	17		13
Duration(Years)		20						

Estimated Capacity introduced in 2012

Surcharge amount for the household (7,000 yen/month) will be 70-100 yen / month based on the following estimation

(Million KW)

	Operation Capacity in 2011	Adding Capacity in 2011 (Estimation)	Purchased under FIT (Million kWh)
PV (Residence)	4.0	1.5	3,200
PV (Non Residence)	0.8	0.5	500
Wind	2.5	0.38	700
Hydro (1-30MW)	9.4	0.02	100
Hydro (Under 1MW)	0.2	0.01	50
Biomass	2.1	0.09	500
Geothermal	0.5	0	0
Total	19.45	2.5	5,000



Thank you
for your attention!