

# The DER Challenges : A Panel of Utility DER Managers Current Topic in Japan

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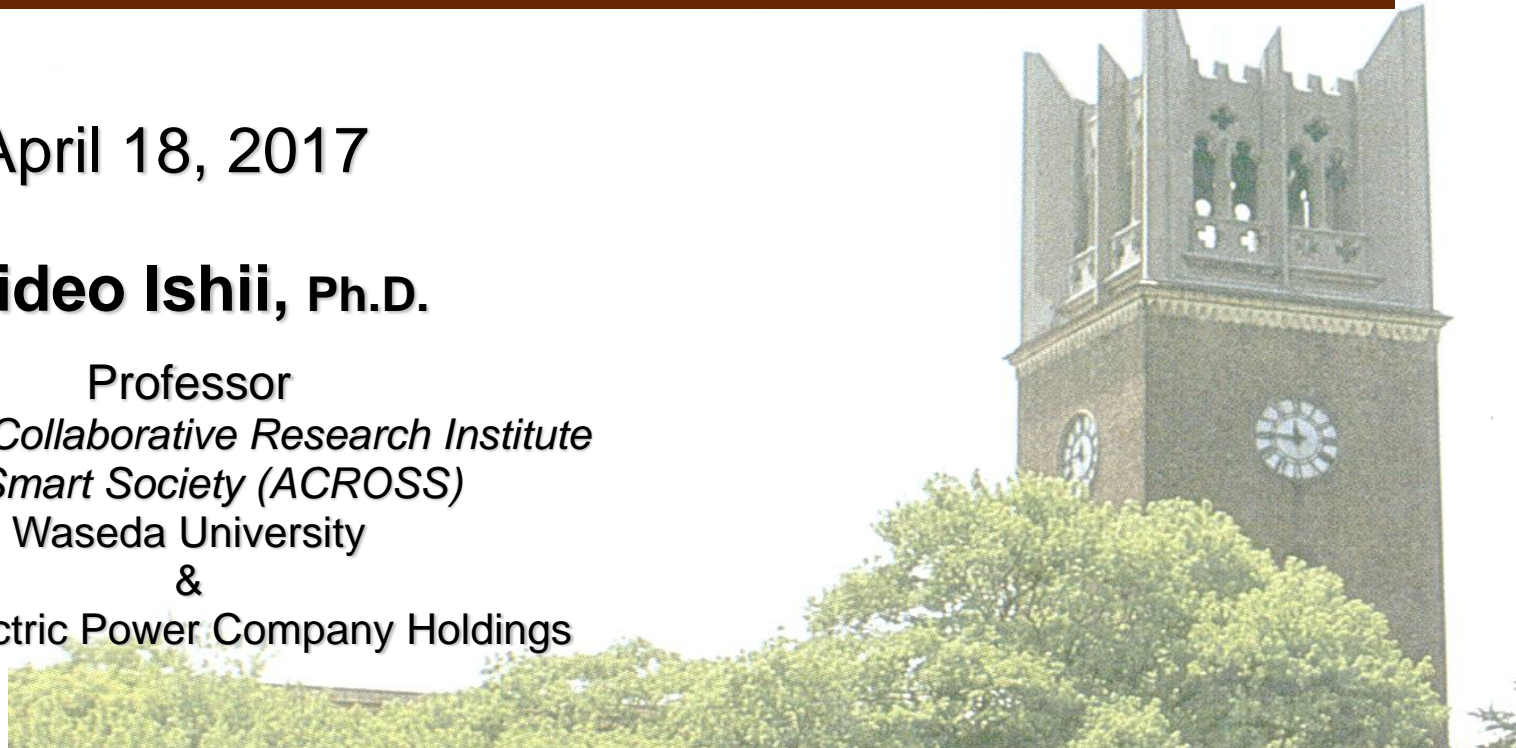
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# Energy Policy & Innovation on Demand side

## □ Foundation of the Policy (Released in 2015)

- Elevating Energy Self-Sufficiency : 6% → 25%
- Reducing Energy Cost : lower than present
- Reducing GHG Emission : ▲26% (base : 2013)

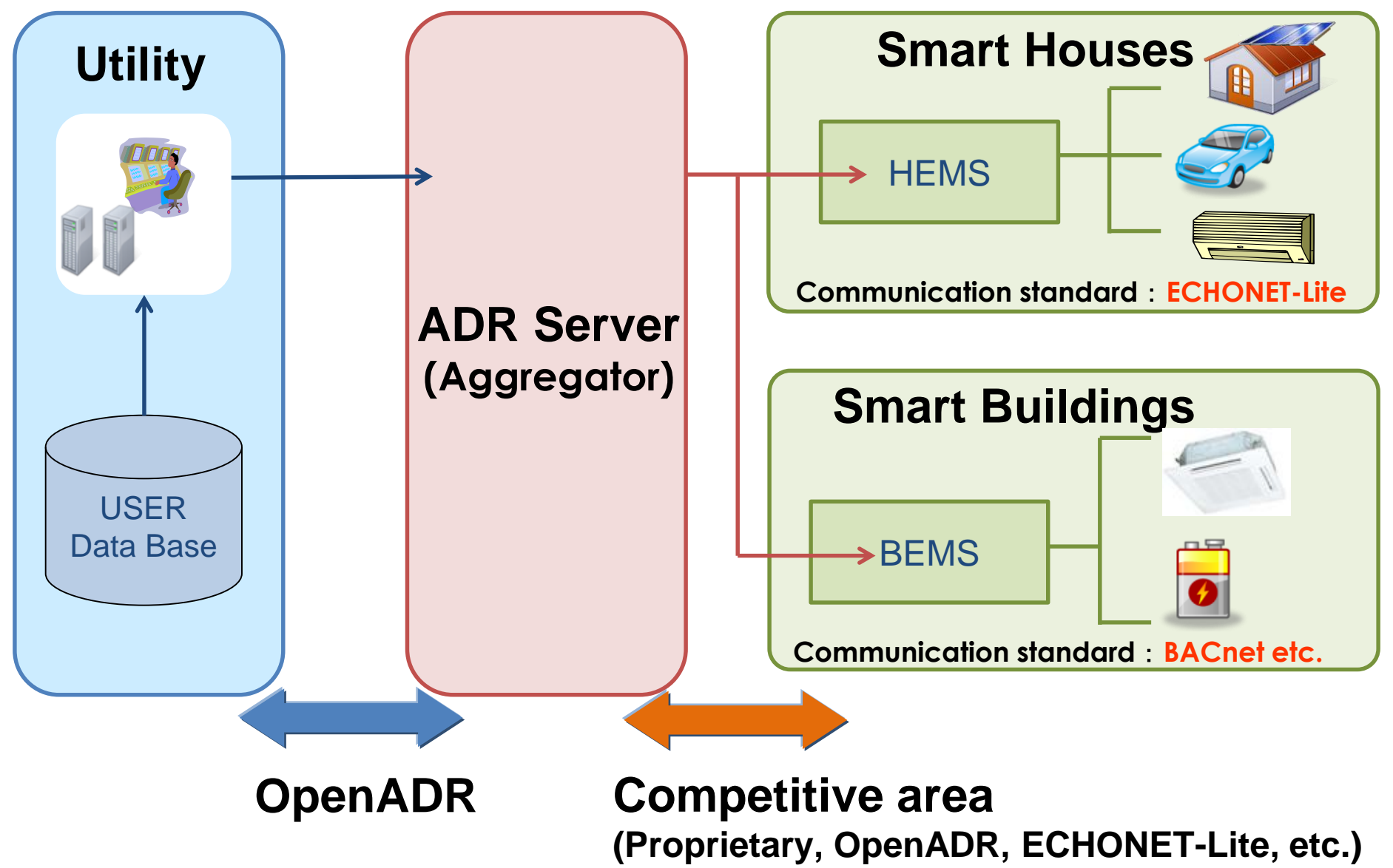
## □ Supply Side

- Electric Power System Reform : deregulation & market
- Mixed use of various resources while increasing RES  
especially PV : 7% of power supply (kWh) ~ 64GW by 2030  
cf) Peak demand ~ 160GW

## □ Demand Side ~ combined with “energy saving”

- Smart Energy Saving : Energy Management / FEMS, BEMS, HEMS  
→ NET Zero Energy House / Building (ZEH / ZEB)
- Smart Demand : Demand Response
- Co-Generation, FC
- EV / PHV
- Battery, Storage

# Standardization of Communication Interface for DR (2012- )



# Demonstration project for incentive based DR : Phase 2

- ✓ **Period : August, 2015 ~ March, 2016**
- ✓ **Utility area : Tokyo, Kansai, Chubu**
- ✓ **Aggregators : 21 entities**
- ✓ **DR program : 3 Categories**

**- 10 min. ahead**

**- 1 hour ahead**

**- 1 day ahead**

DR MENU		10min ahead	1 hour ahead	1 day ahead
Incentive (kW)		JPY6,500/(kW-year)	JPY5,000/(kW-year)	none
Incentive (kWh)		JPY20/kWh	JPY20/kWh	JPY30/kWh
Base Line		Ave. 30min before event dispatch	High 4 of 5	High 4 of 5
Period (duration)	Aug.-Oct.	13:00-17:00 (1 hour)	13:00-17:00 (2 hours)	13:00-17:00 (4 hours)
	Nov.-Jan.	9:00-11:00/17:00-19:00 (1 hour)	9:00-11:00/17:00-19:00 (2 hours)	9:00-11:00/17:00-19:00 (4 hours)

# FIT System for PV (July, 2012~)

## ■ Purchase Price (eventually lowered in every FY)

### <10kW :

- 42JPY/kWh (initial)
- reverse power only (surplus)
- fixed over 10 years

### >10kW :

- 40JPY/kWh (initial)
- all generation
- fixed over 20 years

## ■ Certification

Two steps are required.

- ✓ Certification by the Minister (METI)
- ✓ Interconnection approval by the local Utility

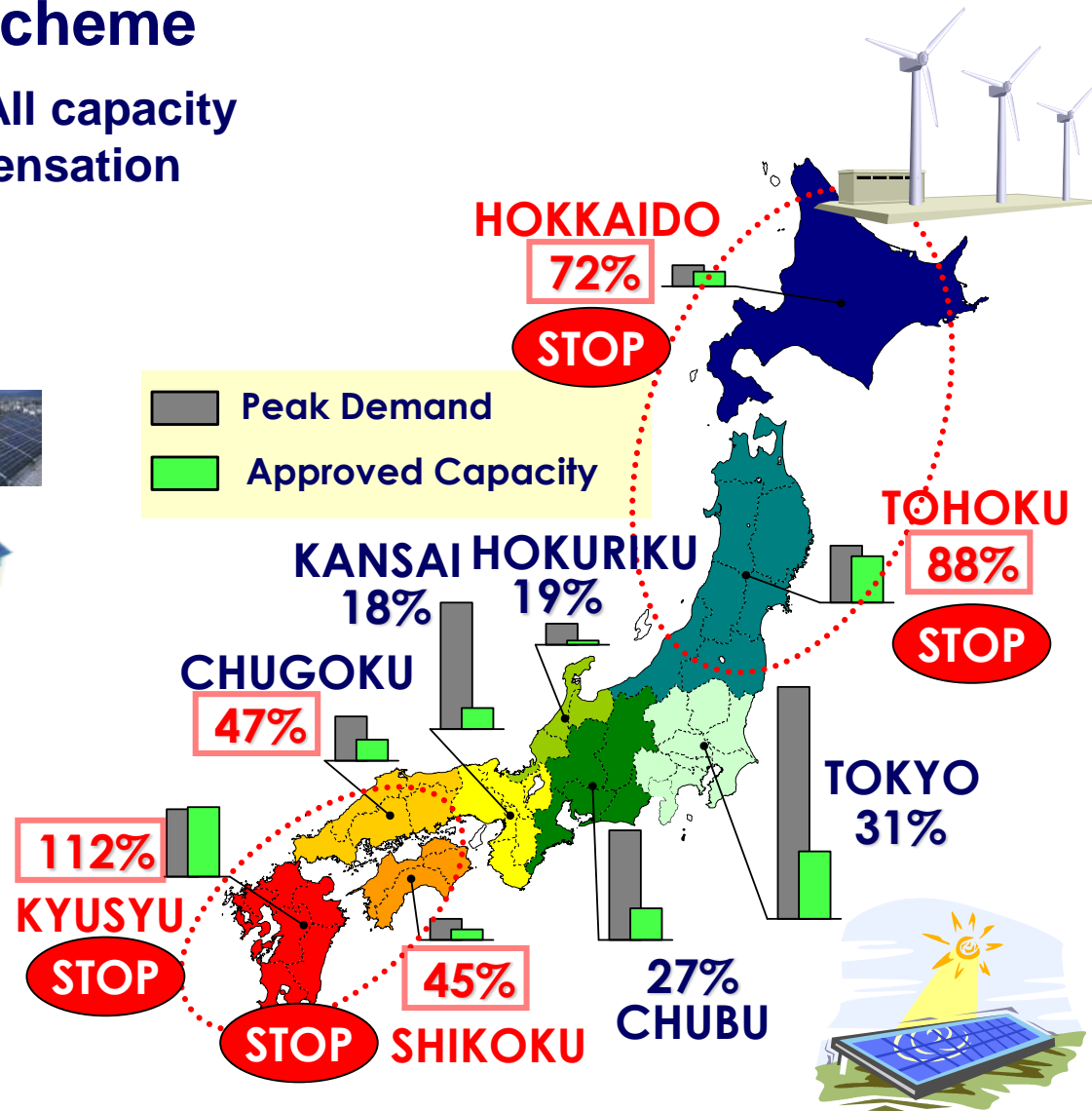
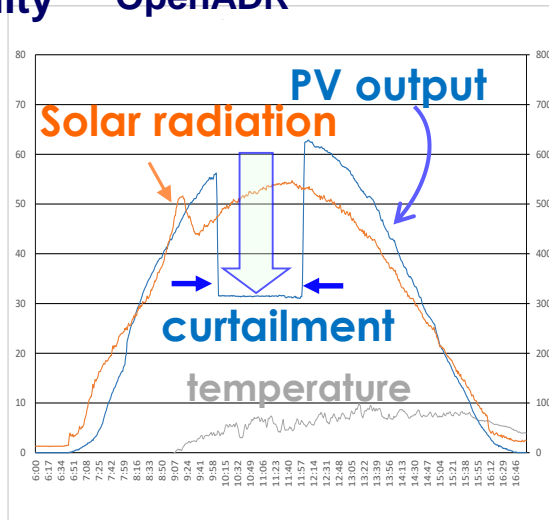
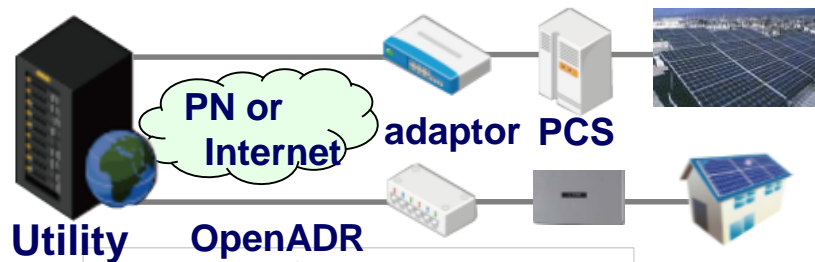


# Revision of FIT by METI/ANRE (December, 2014)

## ❑ New Output Control Scheme

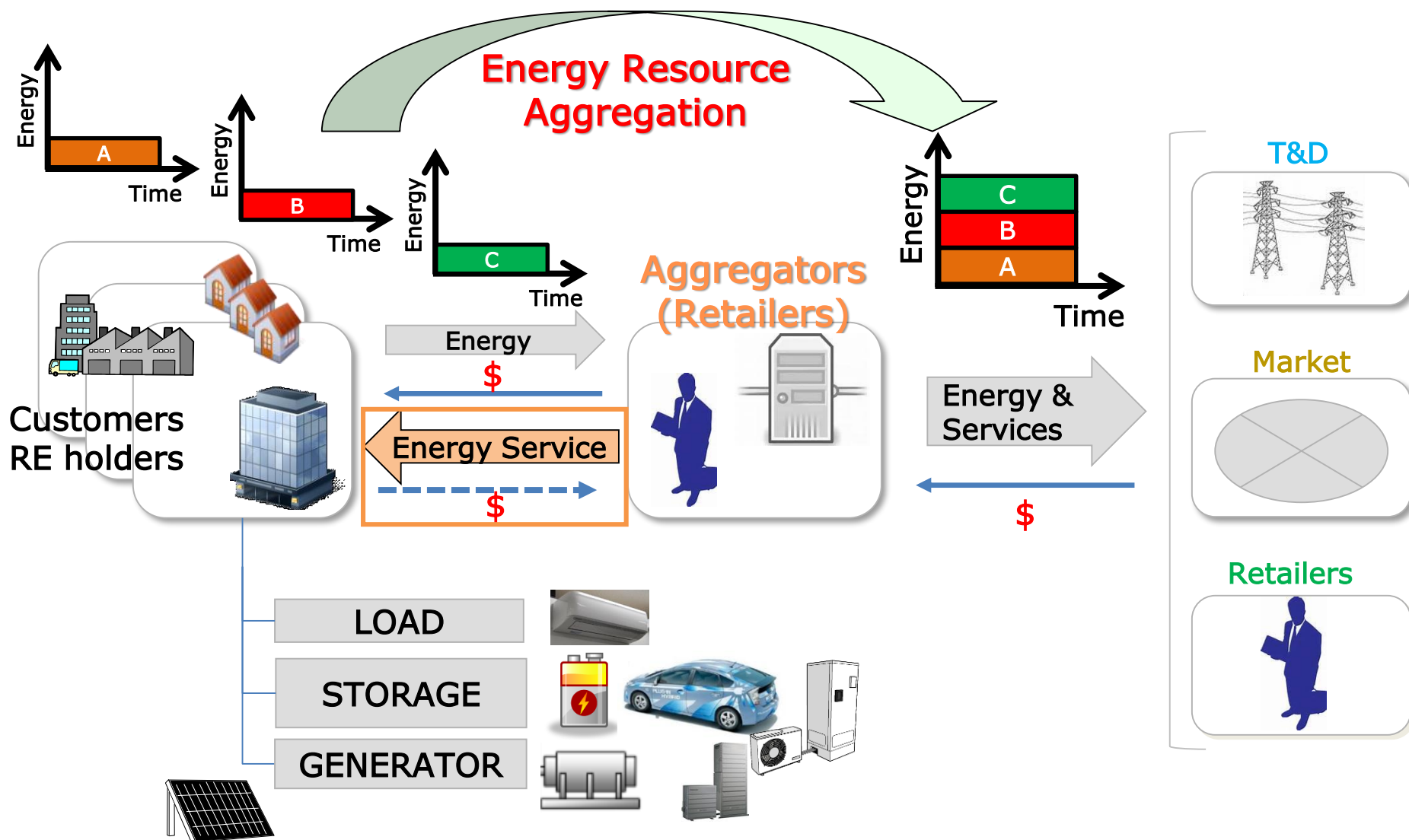
- Remote control function, All capacity
- <360hr/year, without compensation

## ❑ Demonstration PJ (Dec. 2015-Jan. 2016)

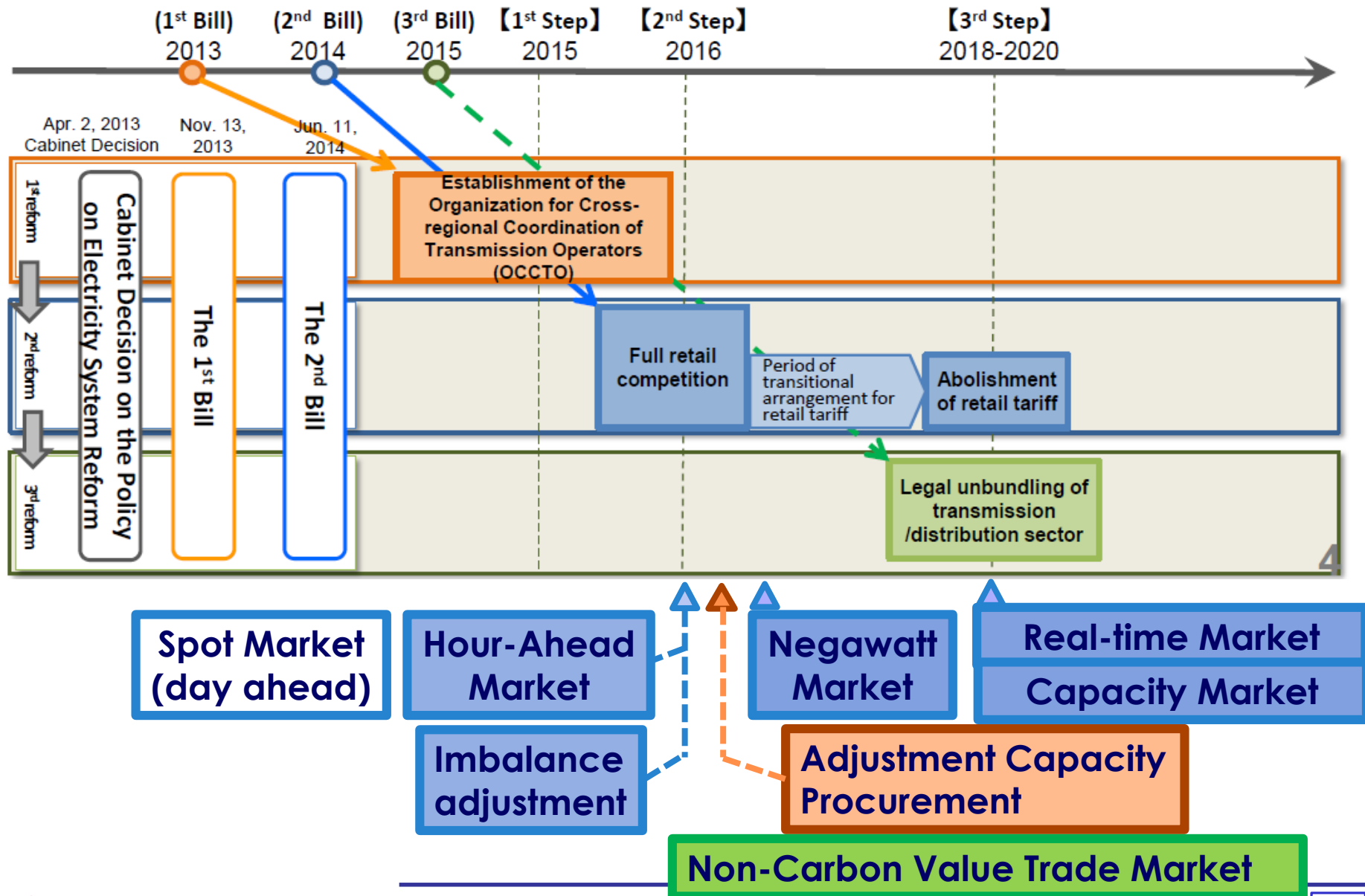


# Energy Resource Aggregation (Virtual Power Plant : VPP)

Extended use of OpenADR for VPP messaging



# Electric Power System Reform & Markets

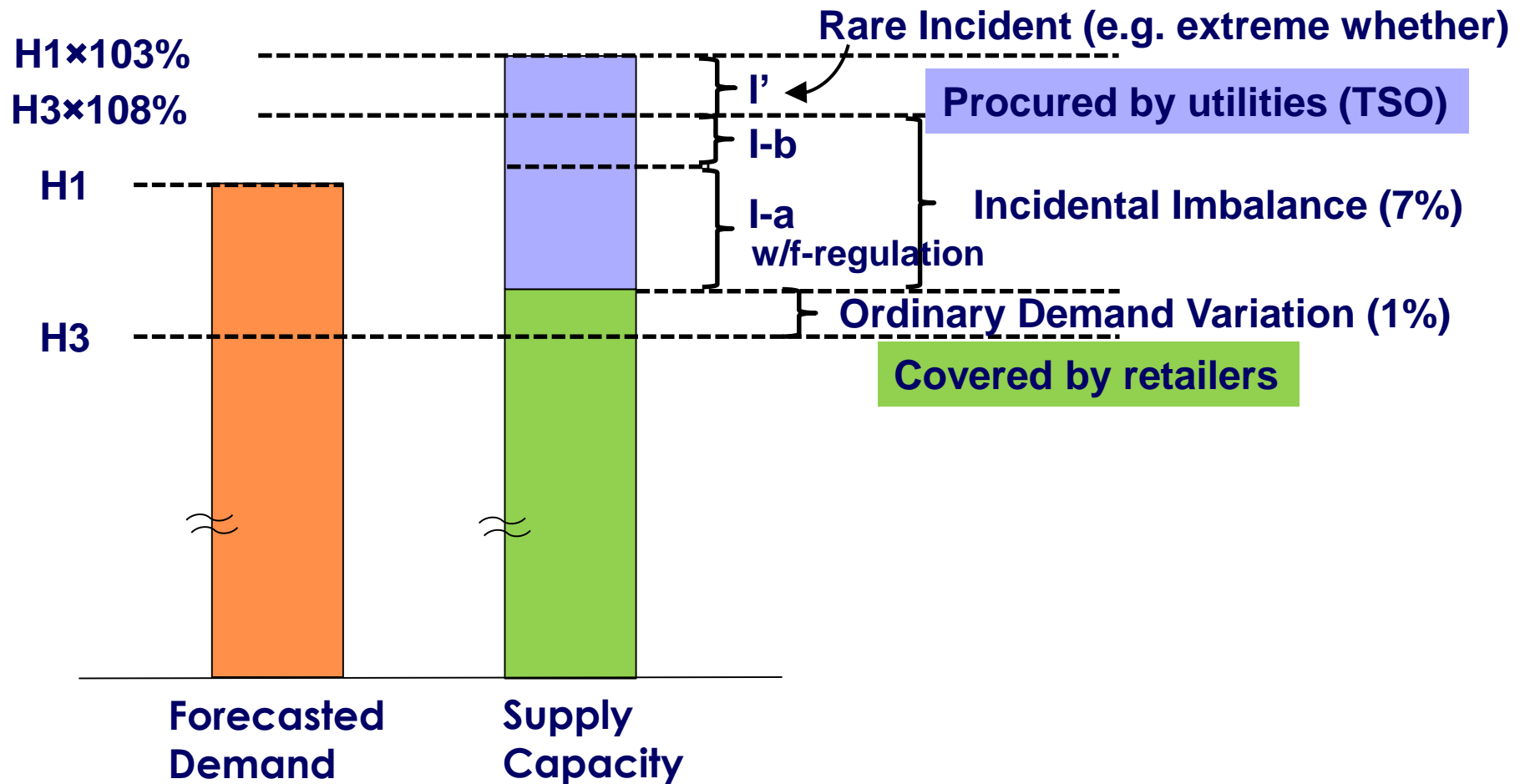


# Adjustment Capacity Procurement

- **Generator I' : 958MW of DR (35 MUSD) by 4 utilities**
- **Generator I-b is also open for DR, but none**

	<b>Generator I-a</b>	<b>Gnerator I-b</b>	<b>Generator I'</b>
On Line Control	Mandate	Mandate	none
Frequency Regulation FN	Mandate	None	None
Response Time	<5 min.	<15 min.	< 3 hours
Duration	7 – 11 hours	7 – 16 hours	2 – 4 hours
Minimum Capacity	5 – 15 MW	5 – 29 MW	> 1 MW
DR (negawatt)	Not allowed	allowed	allowed

# Categories and required capacity



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**Thank you for your attention.**

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