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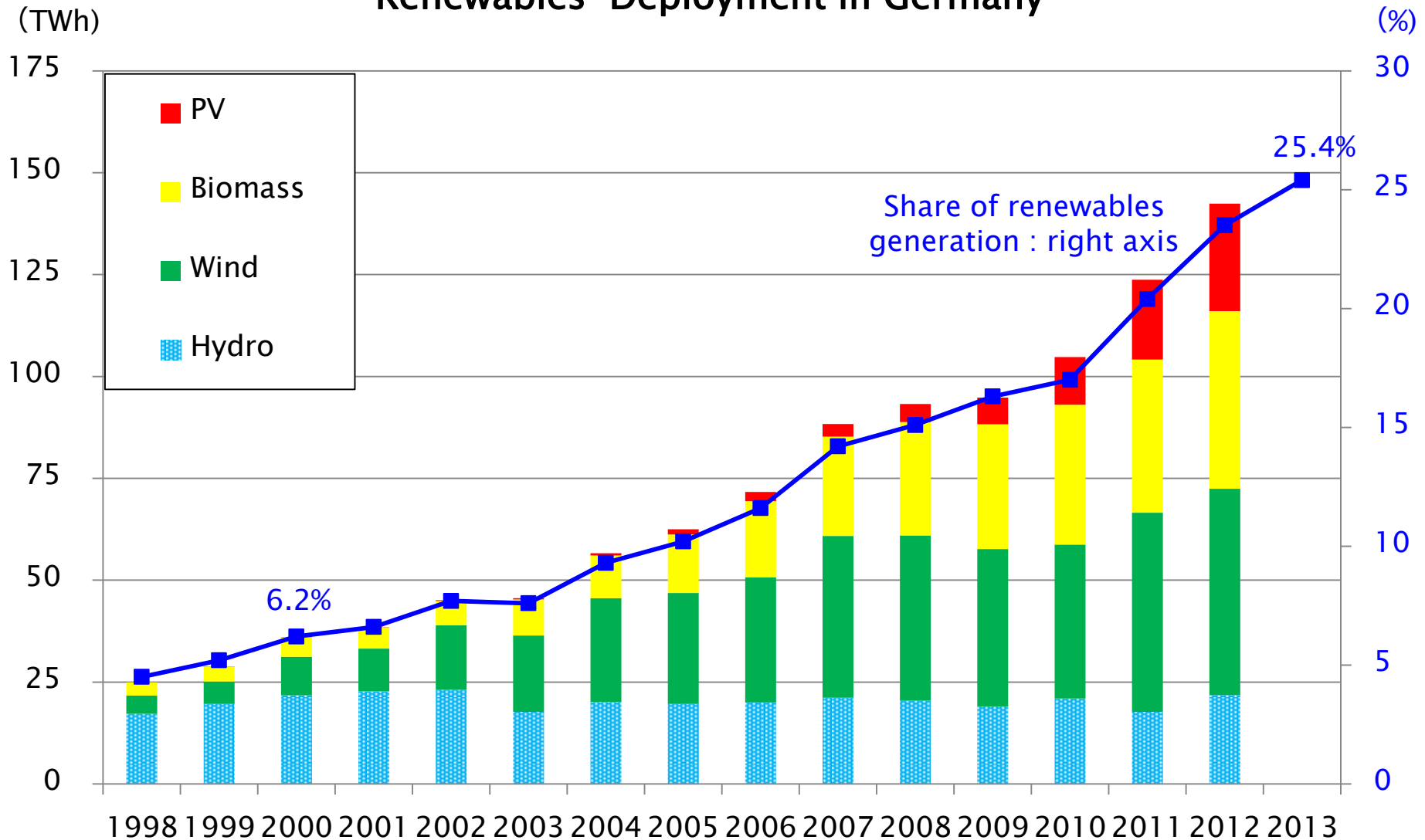
shaping tomorrow with you

# Evaluating German Energiewende – What should Japan learn? –

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# Steady and Balanced Growth

## - Renewables' Deployment in Germany -



# Stable Power Supply

– No large blackout due to Renewables so far –

## Priority Dispatching

- EU RES Directive 2009/28/EC
- Renewables first : merit order

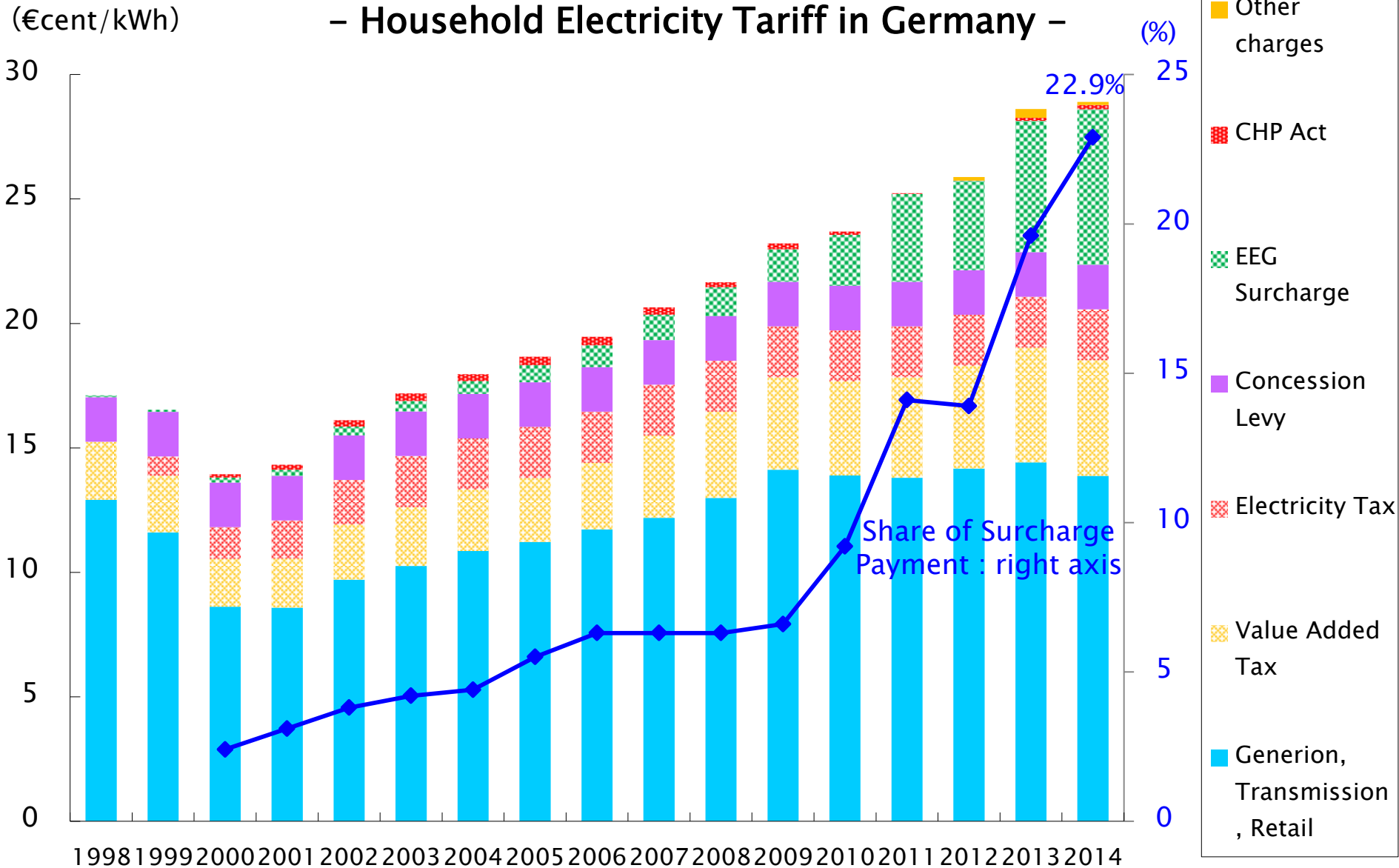
## “Flexibility”

- Adjustment : pumped storage, thermal
- Transmission grid : exporting electricity
- Curtailment of renewables
  - >> Demand-side management
  - >> Power to gas, battery

## Low Capacity Factor of Thermal

- Natural gas-fired
- Capacity mechanism

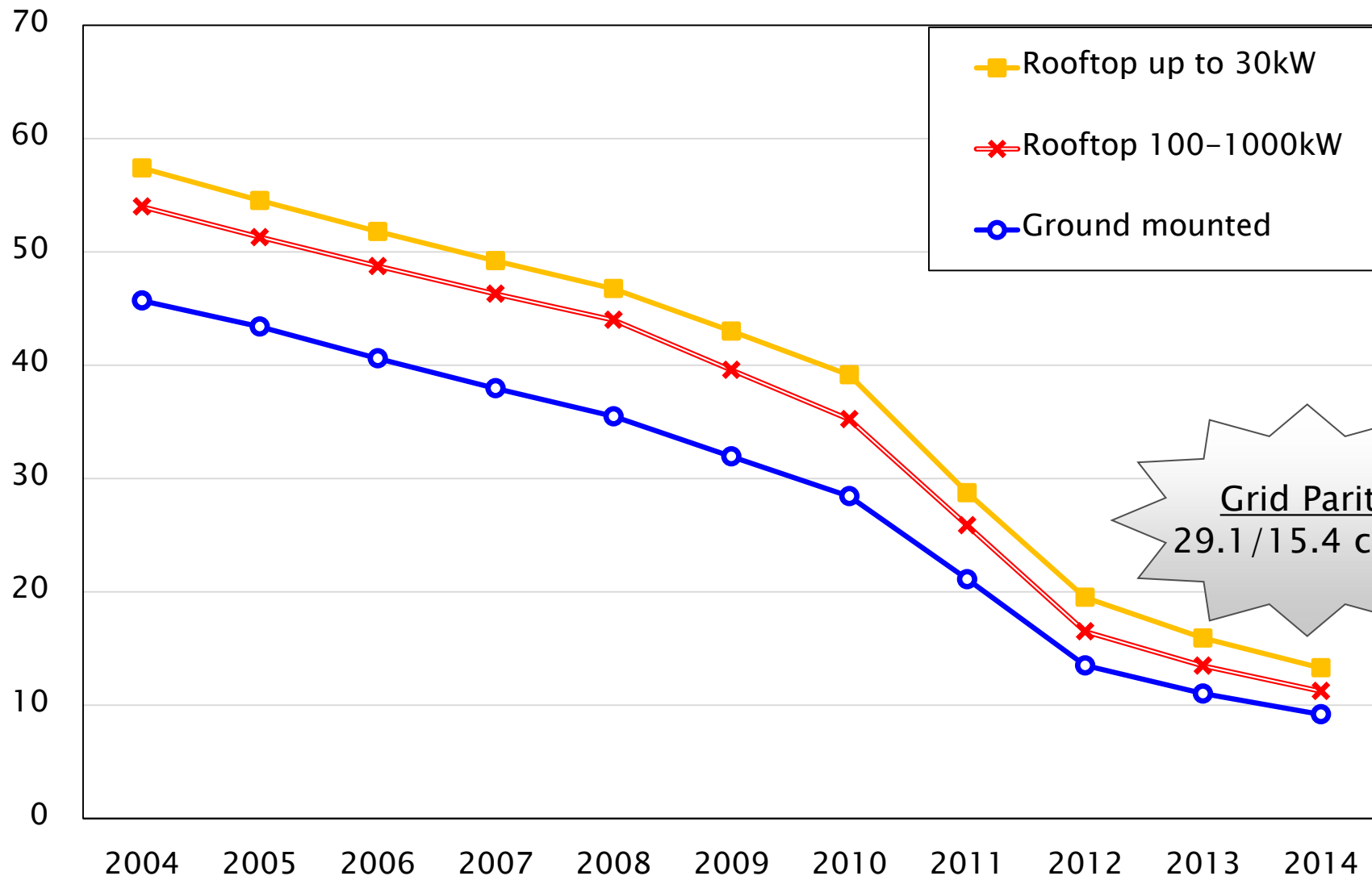
# Electricity Tariff : Doubled?



# Effect of FIT : Cost Reduction

(€cent/kWh)

– Feed-in Tariff for PV in Germany –



Grid Parity  
29.1 / 15.4 cents

## – Refined Operation of FIT –

### Corridor System

- Annual target of deployment : not cap
- Monthly automatic decrease/increase

### Timing of Tariff Setting

- Not at the time of certification
- But at the time of grid connection

### Further Surcharge burden?

- FY2015 : lower surcharge
- From 2020 : steady decrease

# Challenges of Energiewende

– To integrate renewables into power system –

## Market integration

- Direct marketing : feed-in premium
- Auction system : tendering for lower tariff

## Delay of Grid Expansion

- NEP 2012 : 3800km from north to south
- “Not In My Back Yard”
- Export electricity to neighboring nations

## Stagnation of CO2 Reduction

- Can achieve 2020 reduction target?
- Low carbon price
- Cheap coal due to US shale gas
- Domestic lignite : local jobs

# Public Support to the Energiewende

– Opinion Survey about German Energiewende –

How do you assess the decision to carry out the Energiewende from today's perspective?;

Very good

26%

Good

40%

Renewable energy use and development are;

Extremely important

66%

Important

27%

Attitude towards increasing EEG surcharge to Approximately 6 eurocents;

Not enough

5%

Appropriate

50%



# What should Japan learn from Germany?

## Refined Operation of FIT

- Decrease tariff for PV
- Frequent change of tariff
- Tariff setting in consideration of source mix

## Priority Dispatching

- NO uniform “accessible capacity”
- Pumped hydro : 26GW
- Interregional grid

## Rational Curtailment of Renewables

- 1% of annual generation, not 8% (=1 month)
- Compensation by TSO

## Long-term Target of Deployment

- 2030 : at least 30%
- Based on people’s consensus

⇒ **Japan’s problem : not technical, but institutional –**