

再生可能エネルギーのコスト

**COST OF RENEWABLE  
ENERGY**

**REvision 2013 – CREATING A NEW RENEWABLE  
ENERGY FUTURE, TOKYO**

中村有吾 YUGO NAKAMURA

26 FEBRUARY 2013



# 内容

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1. 国内市場の状況

Japan market summary

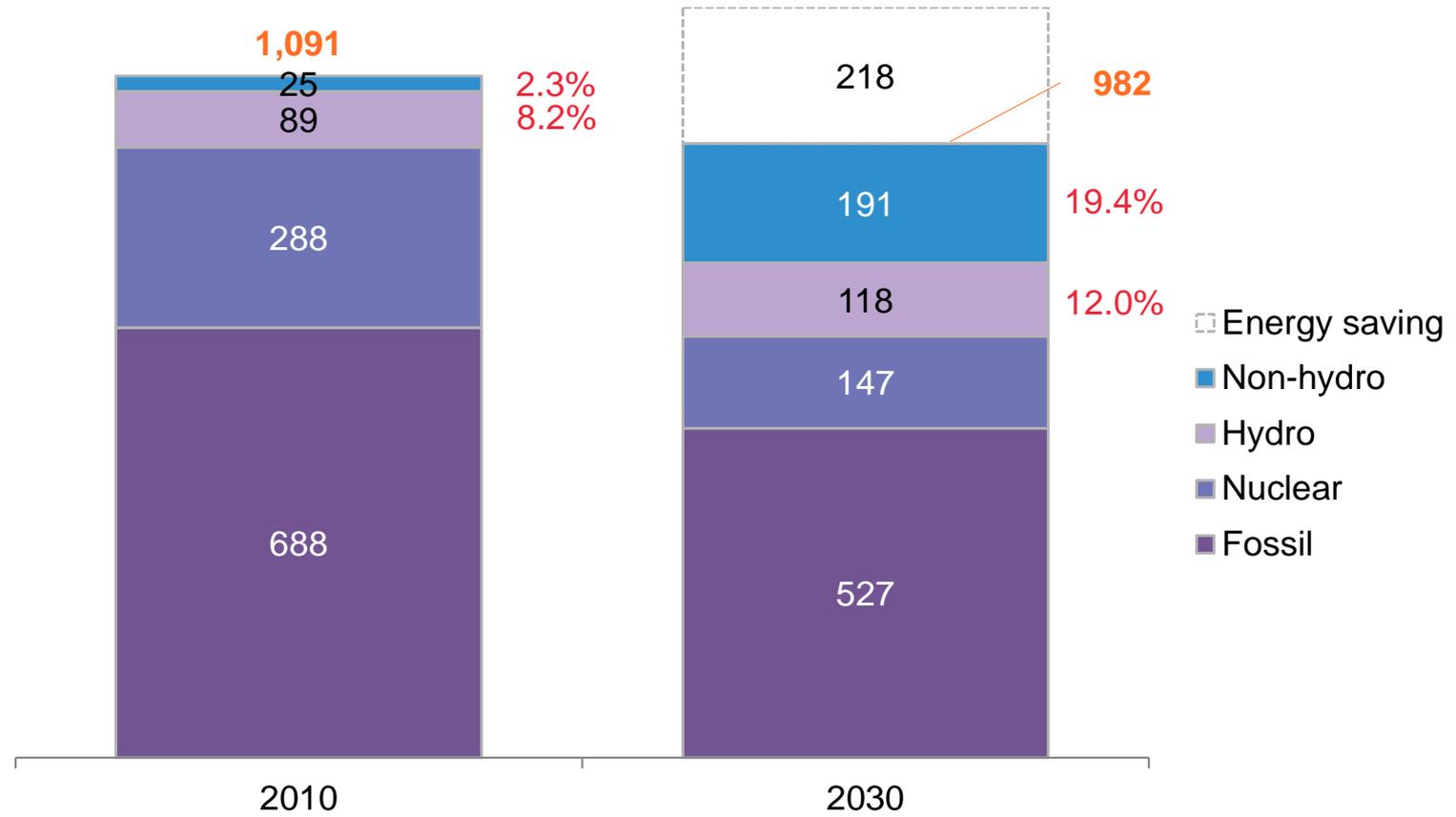
2. コストの現状

Cost analysis

3. 日本の課題

Challenges Japan faces

# 政府の電源別2030年電力供給シナリオ (TWh)

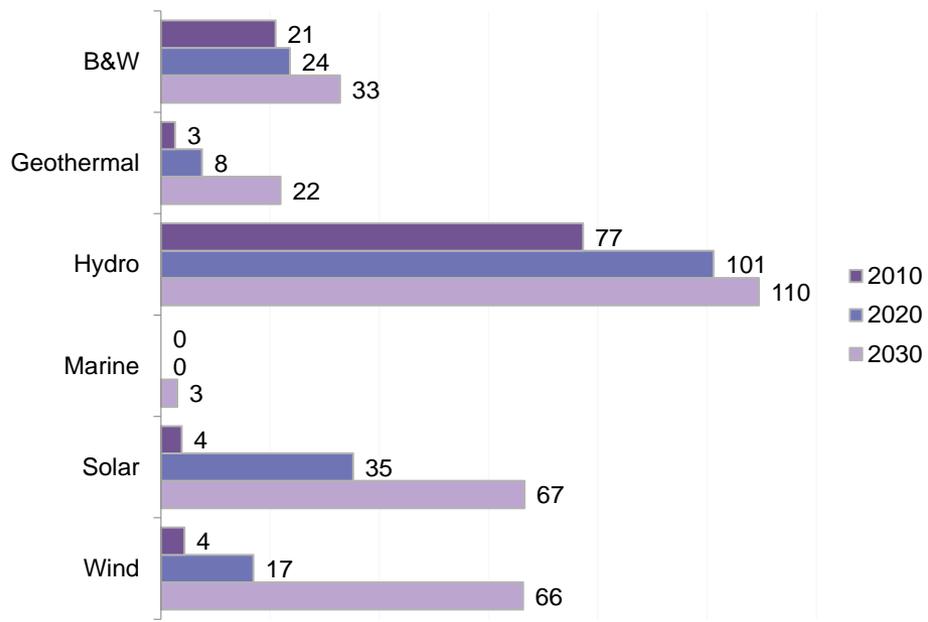


Note; GoJ's scenario as of 29 June 2012. A conservative scenario assuming nuclear supplies 15% of power as of 2030. Hydro includes 'pumped hydro'.

Source: National Policy Unit(NPU)

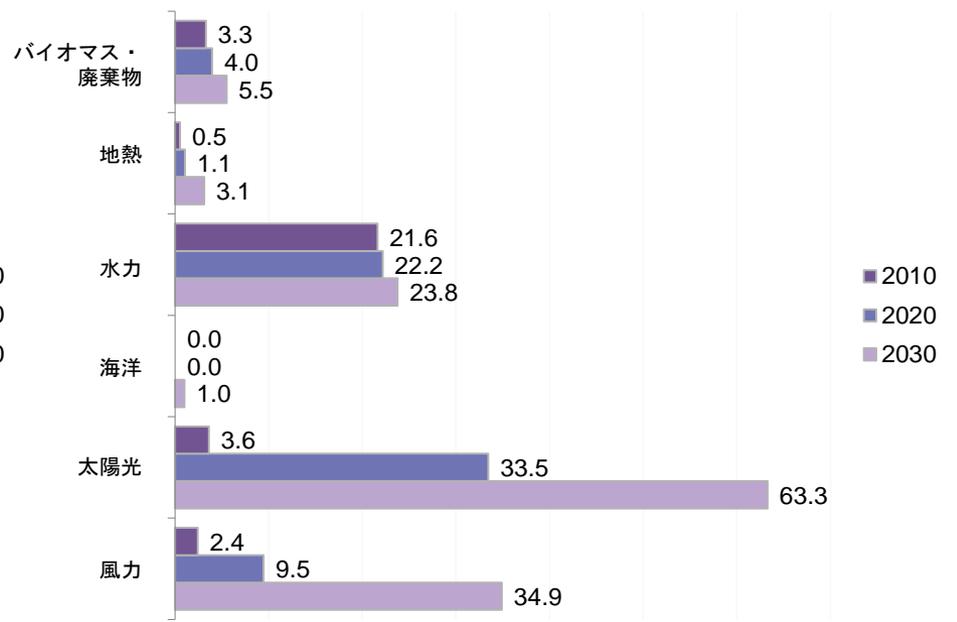
# 政府の電源別再生可能エネルギー導入シナリオ 2010年、2020年、2030年

## 再生可能エネルギーからの電力供給 (TWh)



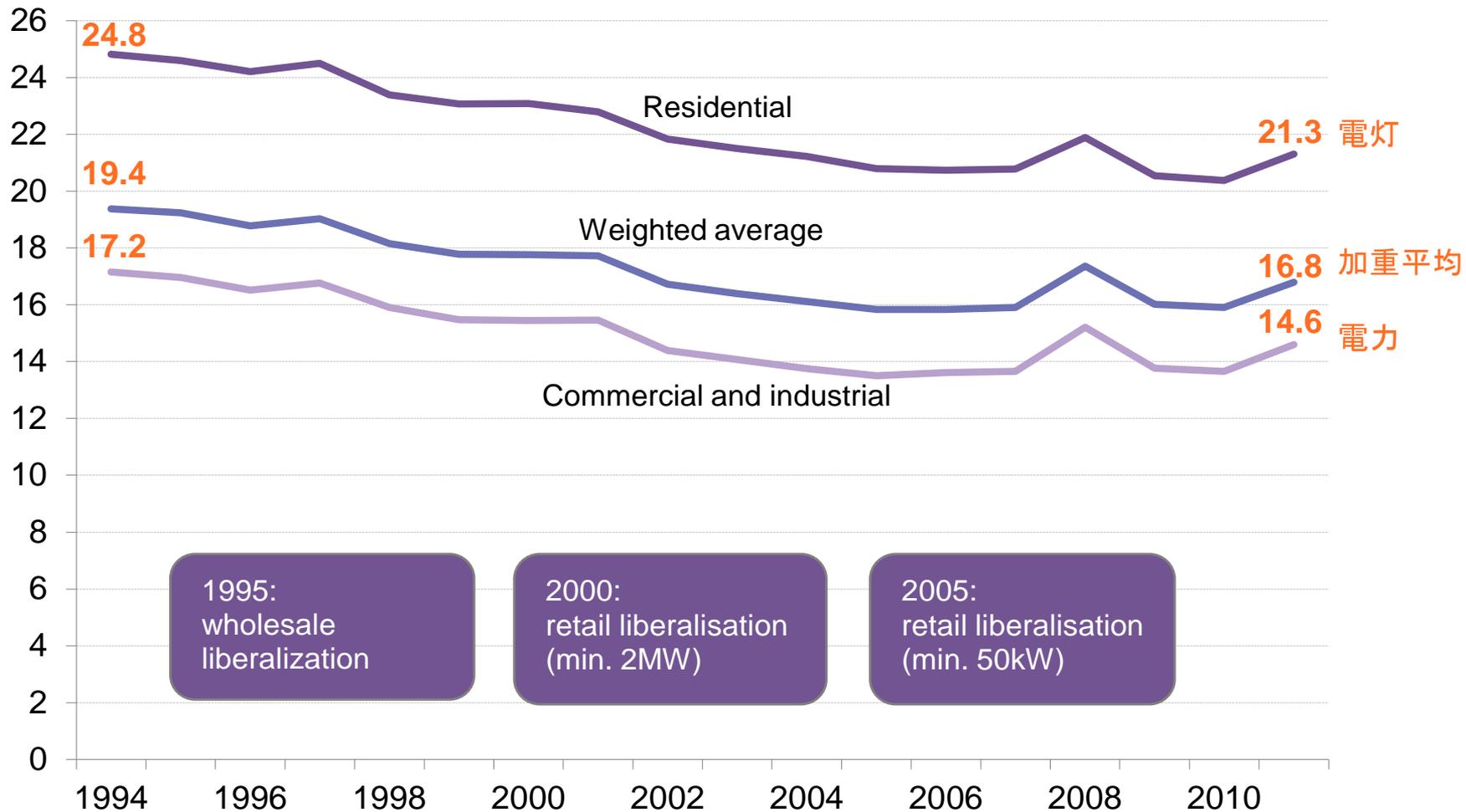
Source: NPU, Bloomberg New Energy Finance  
 Note: B&W=biomass and waste. 2010 B&W supply and capacity are adjusted based on Bloomberg New Energy Finance estimates. Hydro excludes 'pumped hydro'.

## 再生可能エネルギー累計設置容量 (GW)



Source: NPU, Bloomberg New Energy Finance  
 Note: B&W=biomass and waste. 2010 B&W supply and capacity are adjusted based on Bloomberg New Energy Finance estimates. Hydro excludes 'pumped hydro'.

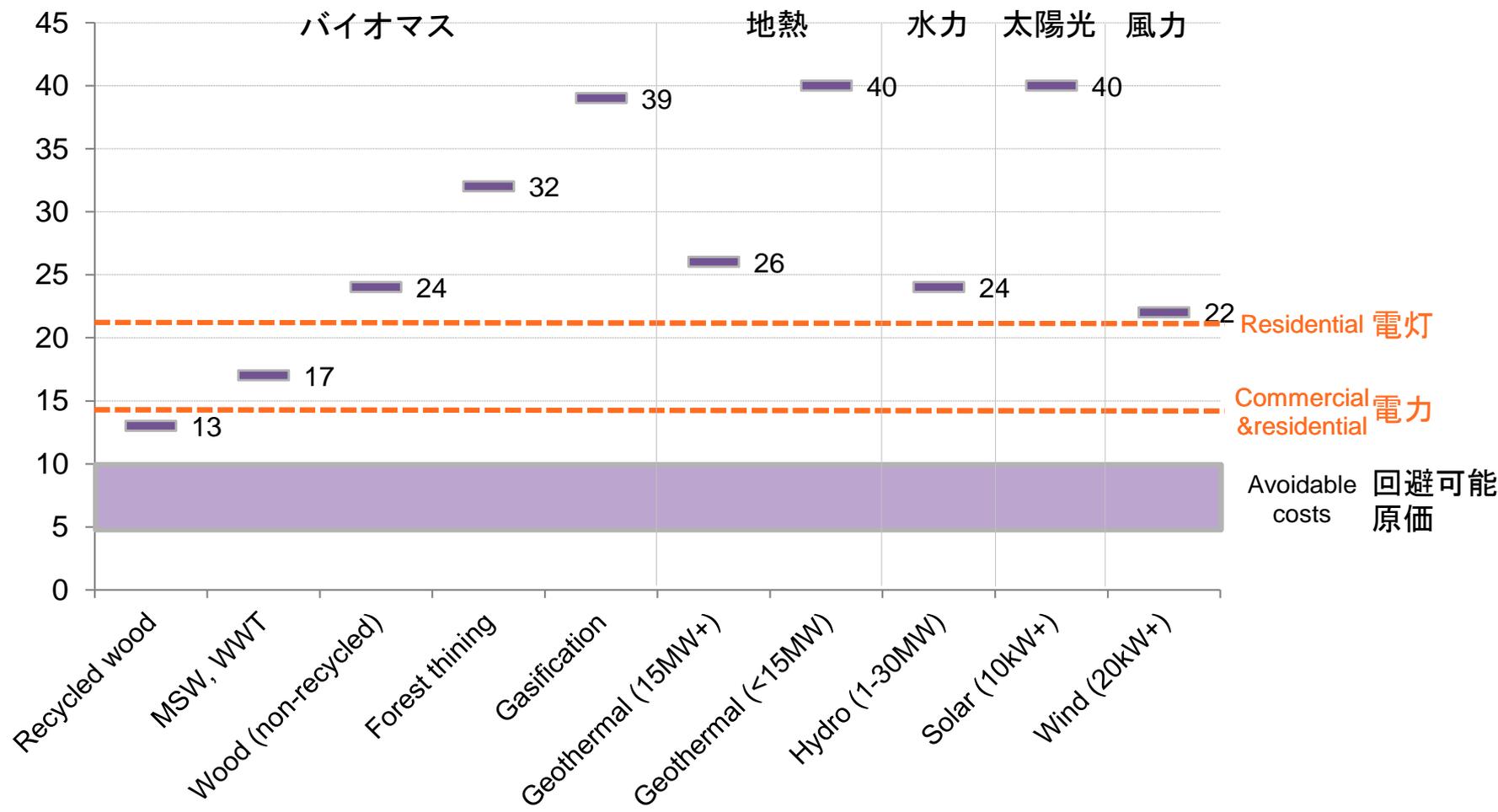
# 日本の電力小売価格推移、1994-2011年度 (JPY/kWh)



Source: Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry (ANRE/METI)

Note: Prices exclude consumption tax (5% as of February 2013)

# 電源別主な買取価格と小売価格、回避可能原価 (JPY/kWh)



Note: Consumption tax excluded. Tariffs apply for 15 years for geothermal, and 20 years for others.

Source: ANRE/METI

# 内容

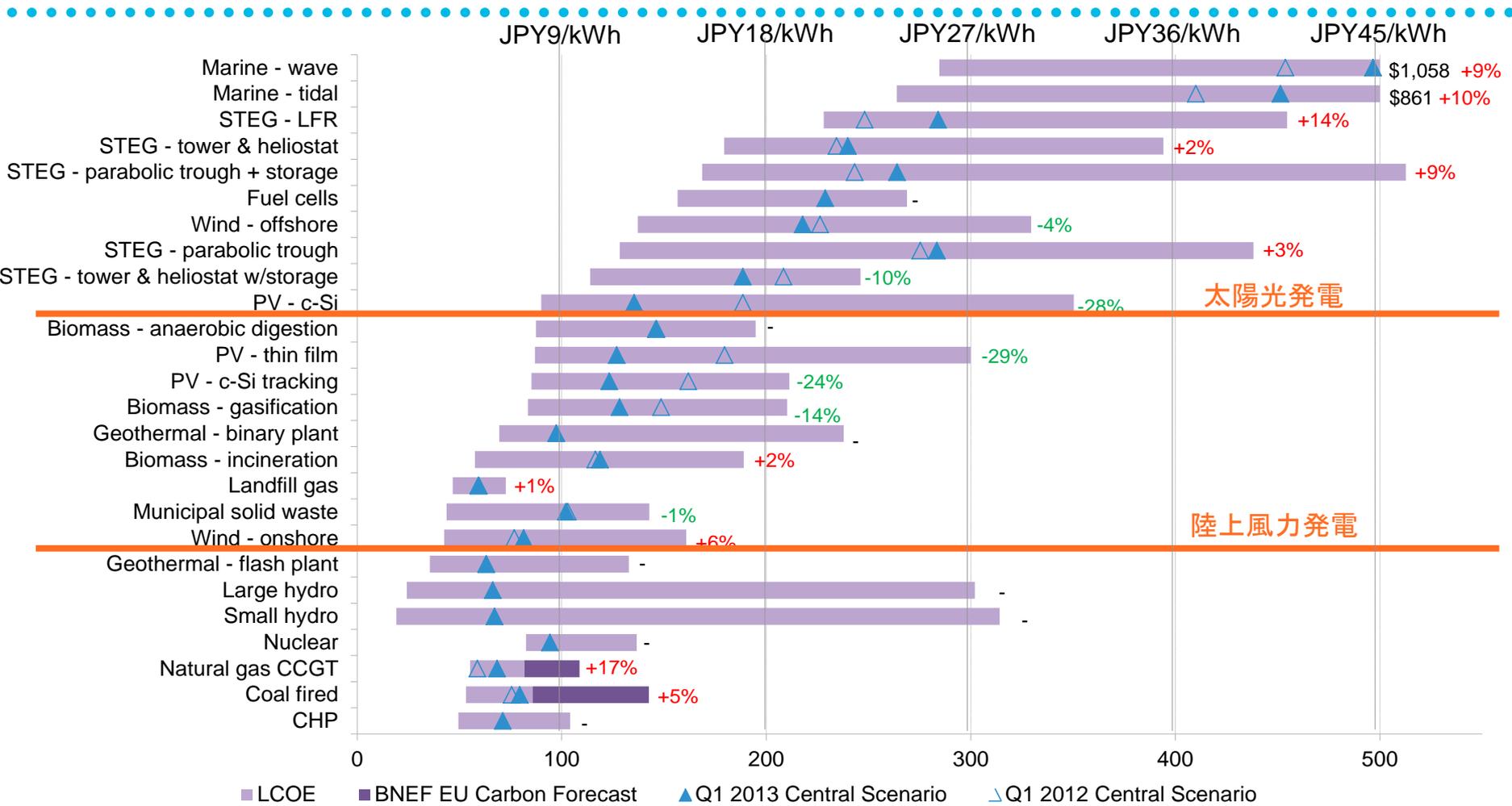
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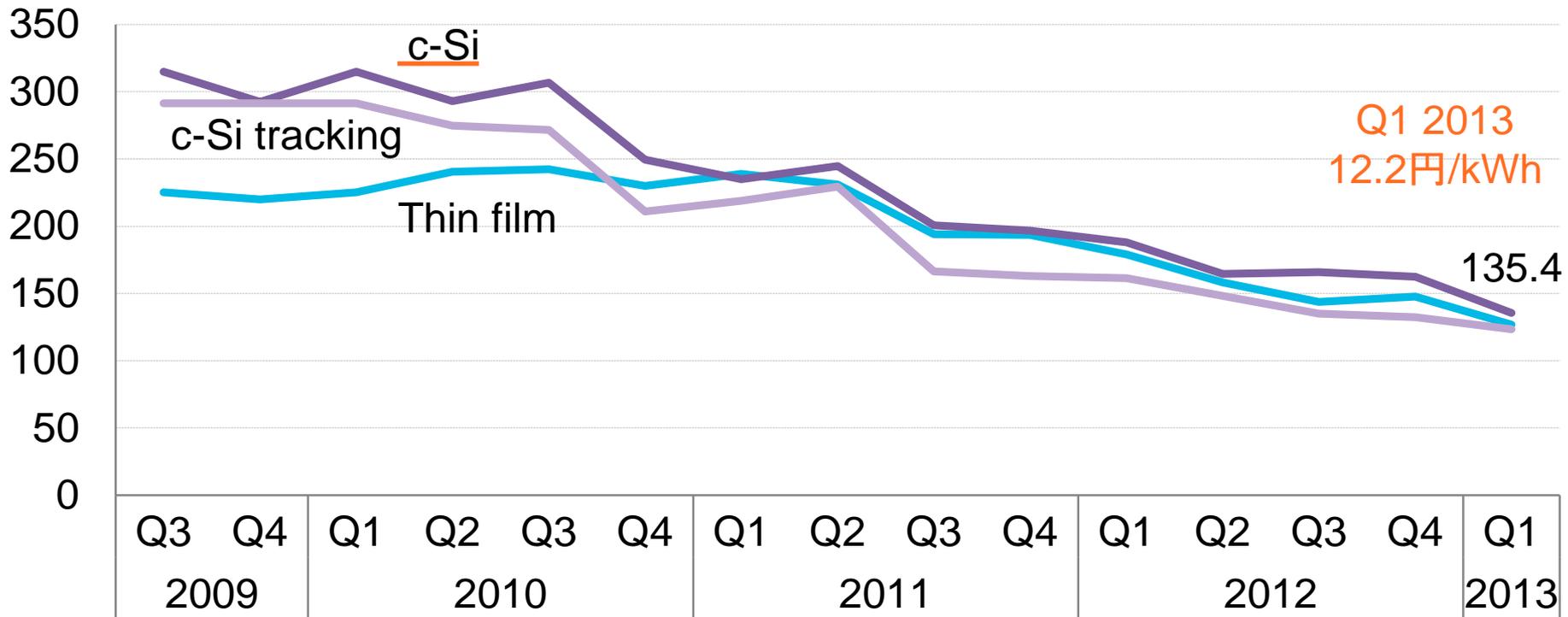
# 前年同期比2013年第1四半期版平準化発電コスト (\$/MWh)



Source: Bloomberg New Energy Finance. Note: Carbon forecasts from the Bloomberg New Energy Finance European Carbon Model with an average price to 2030 of \$48/mt. Coal and natural gas prices from the US EIA and BNEF. Percentage change represents change from Q1 2012. 1USD=JPY 90

Source: Bloomberg New Energy Finance

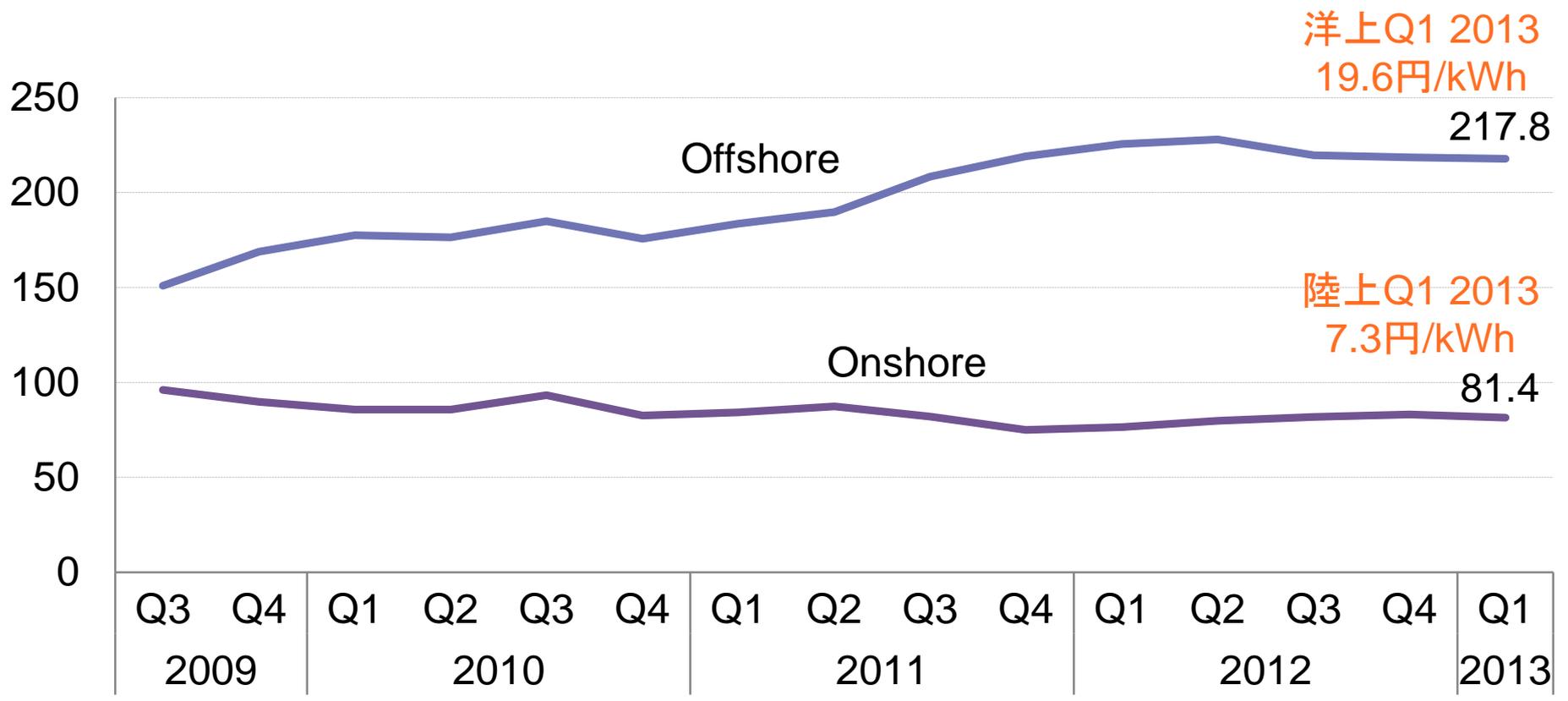
# 太陽光発電平準化発電コスト (\$/MWh)



Prices are in nominal dollars. 1USD=JPY 90.

Source: Bloomberg New Energy Finance

# 風力発電平準化発電コスト (\$/MWh)

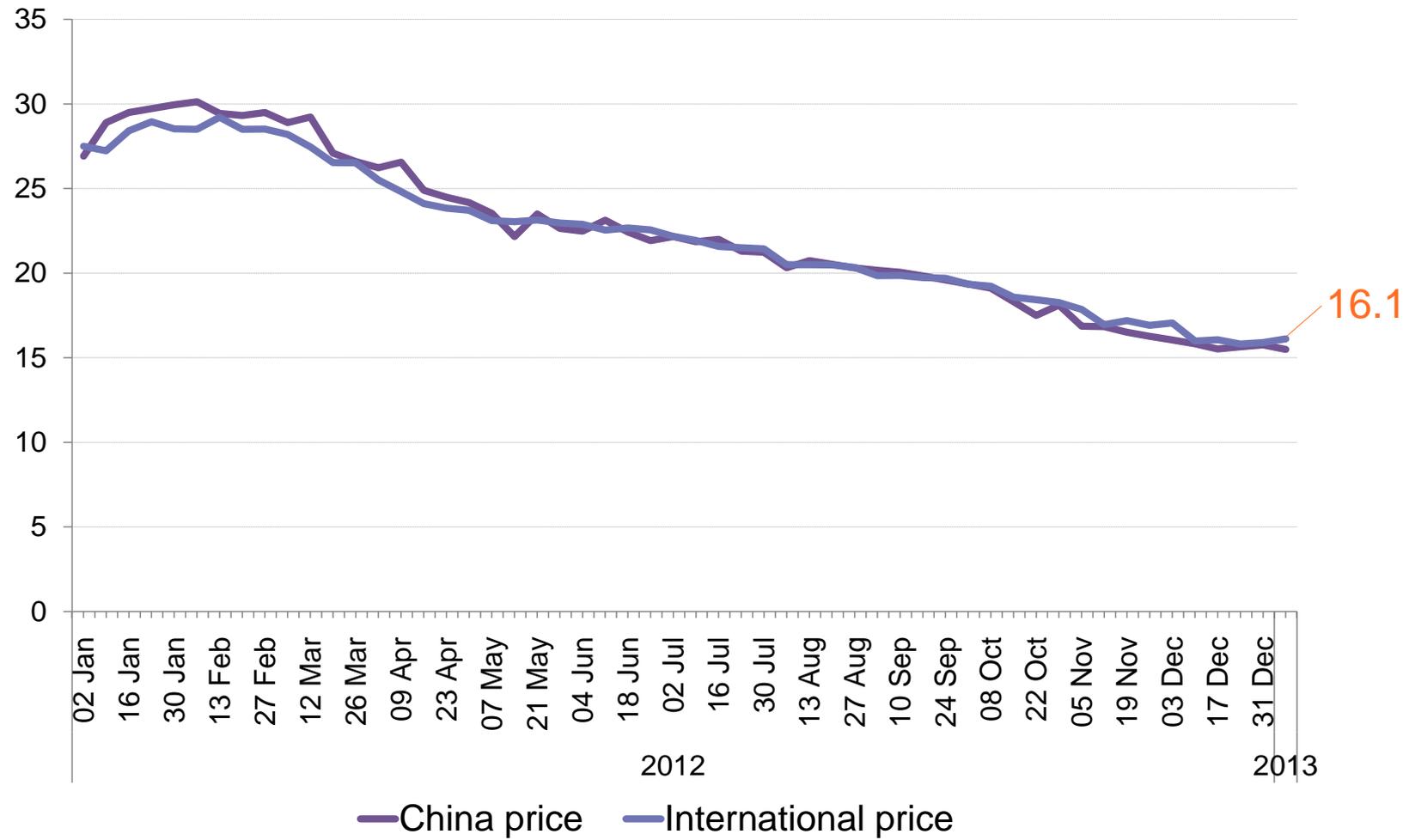


Prices are in nominal dollars. 1USD=JPY 90.

Source: Bloomberg New Energy Finance

# 2012年1月第1週-2013年1月第1週

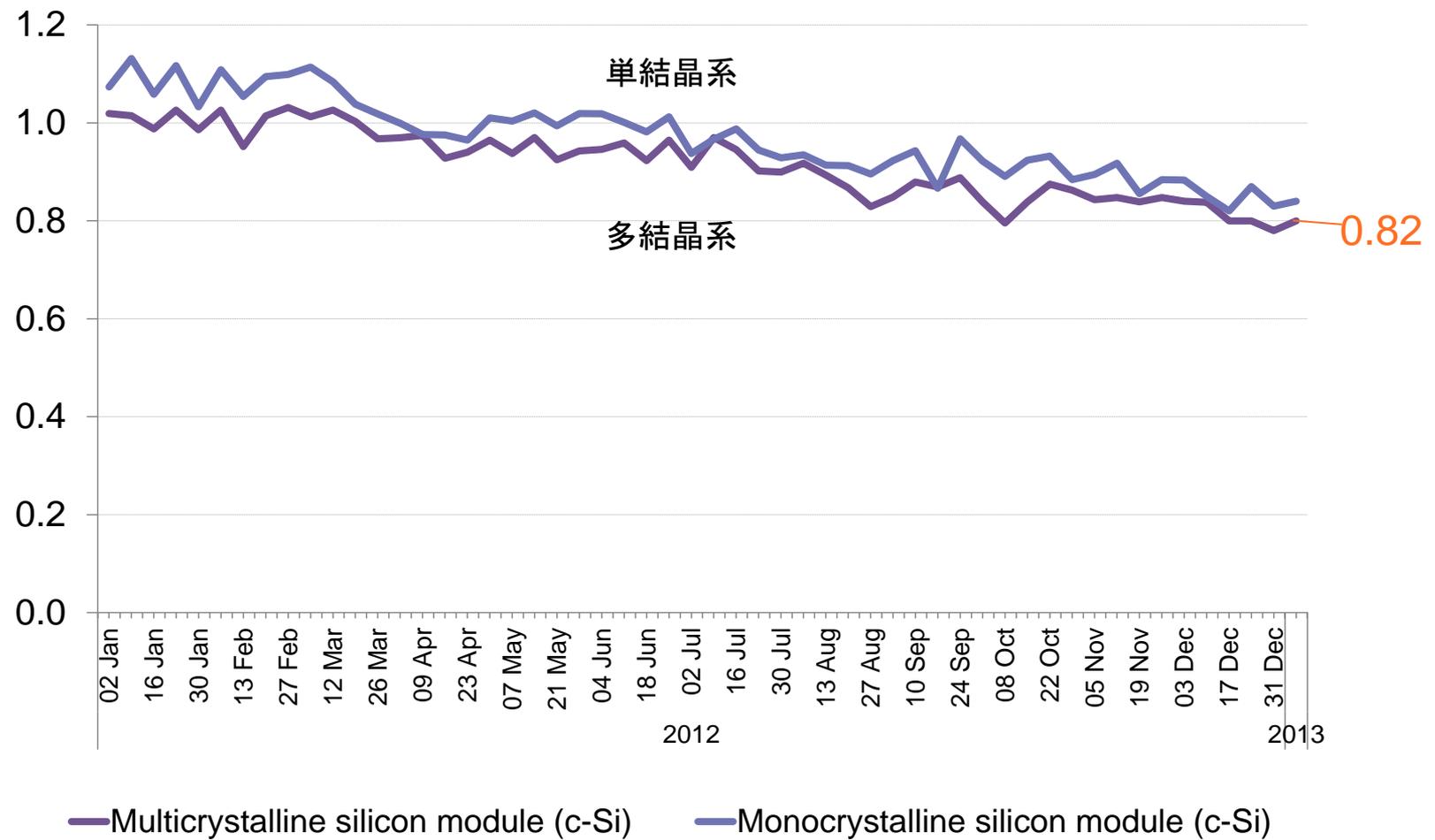
## ソーラーグレードポリシリコン価格推移 (\$/KG)



Note: Solar grade polysilicon price. Dates represent first day of the week for which the price has been averaged, ie, 8 August represents quote for the week 8-14 August.

Source: Bloomberg New Energy Finance

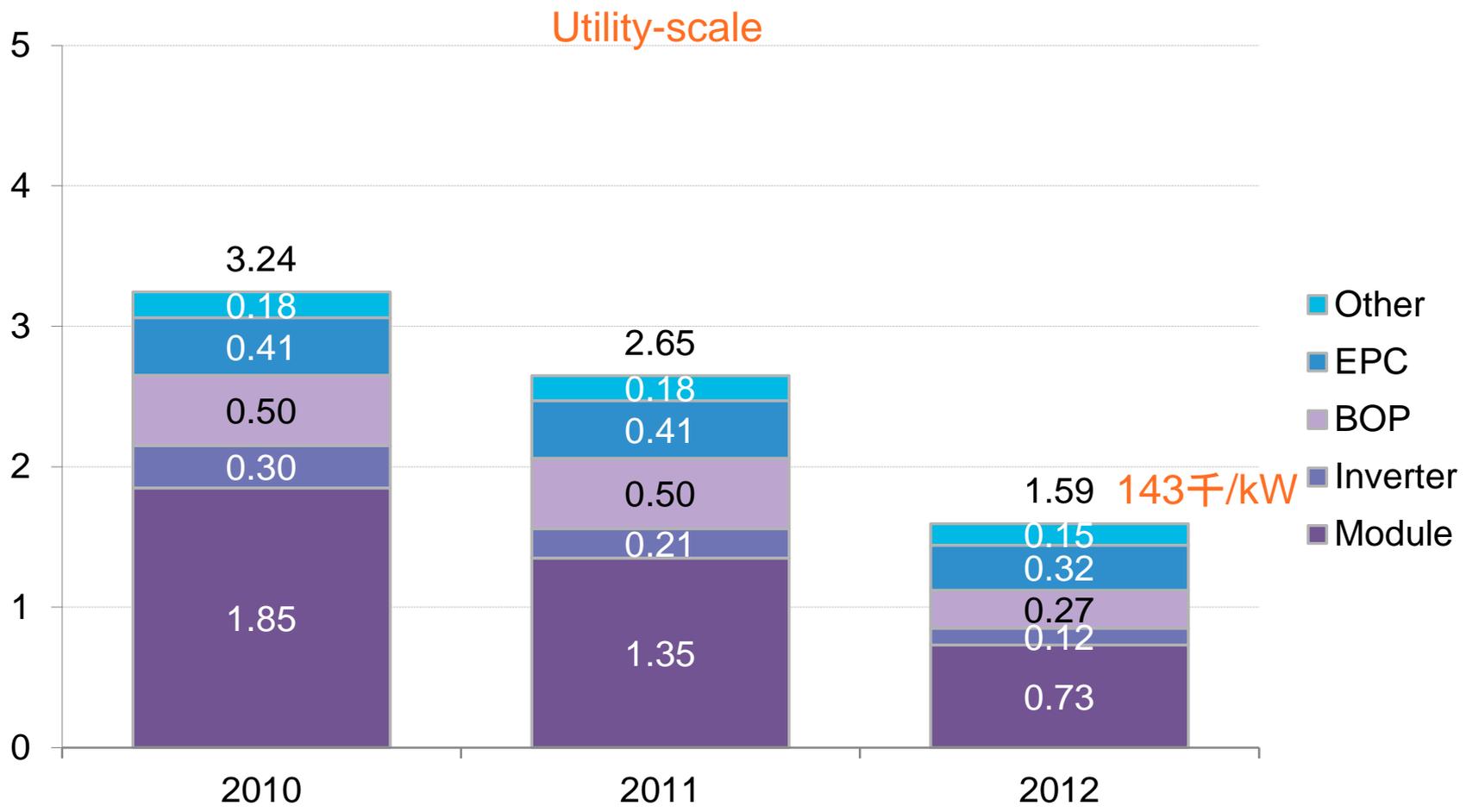
# 2012年1月第1週-2013年1月第1週 シリコン系モジュール国際スポット価格推移 (\$/W)



Note: Dates represent first day of the week for which the price has been averaged, ie, 8 August represents quote for the week 8-14 August.

Source: Bloomberg New Energy Finance

# 要素別発電事業規模太陽光発電設備コスト単価推移 2010年-2012年 (\$/W)



Note: 1USD=JPY 90

Source: Bloomberg New Energy Finance

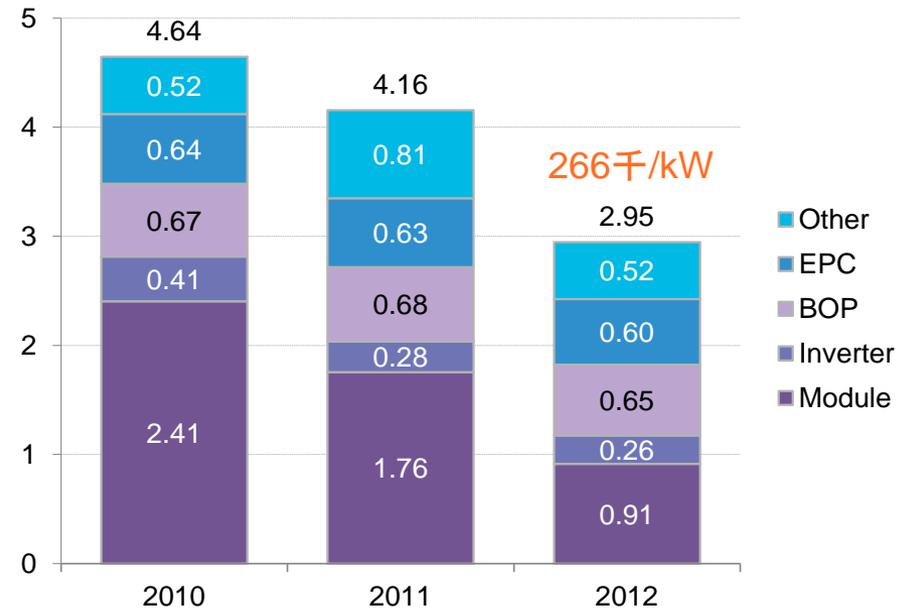
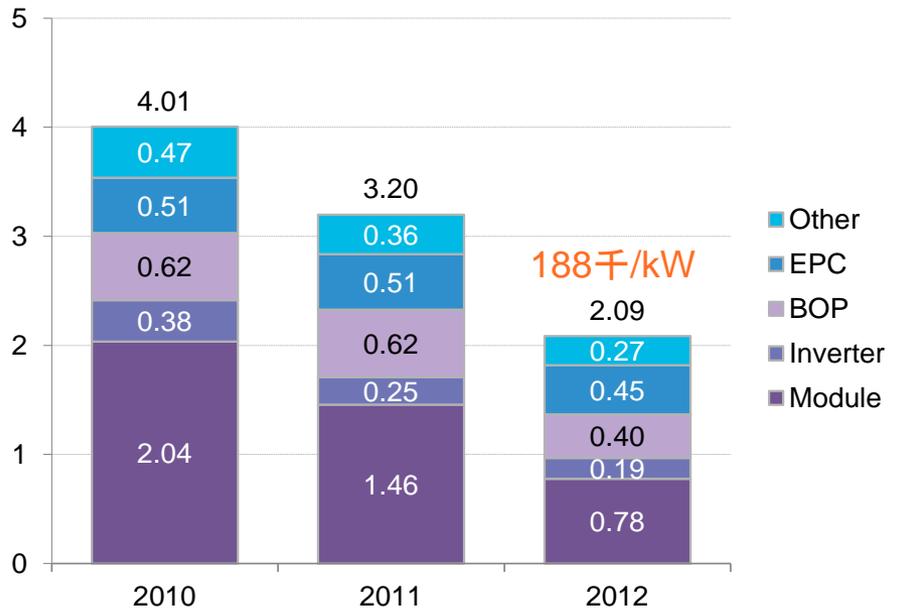
# 要素別太陽光発電設備コスト単価推移 2010年-2012年

業務用規模(\$/W)

住宅用(\$/W)

Commercial-scale

Residential-scale



Note: 1USD=JPY 90

Source: Bloomberg New Energy Finance

# 内容

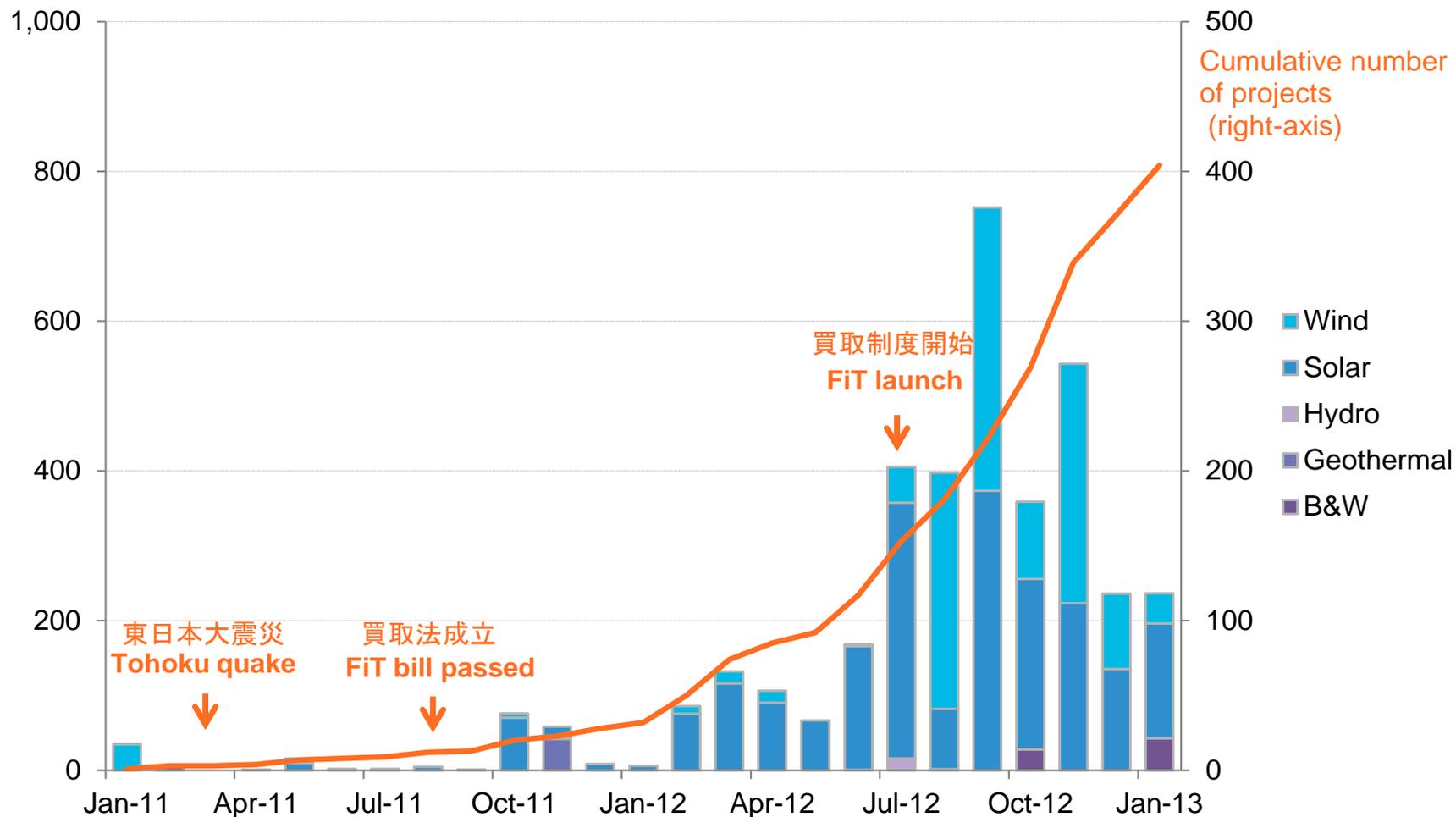
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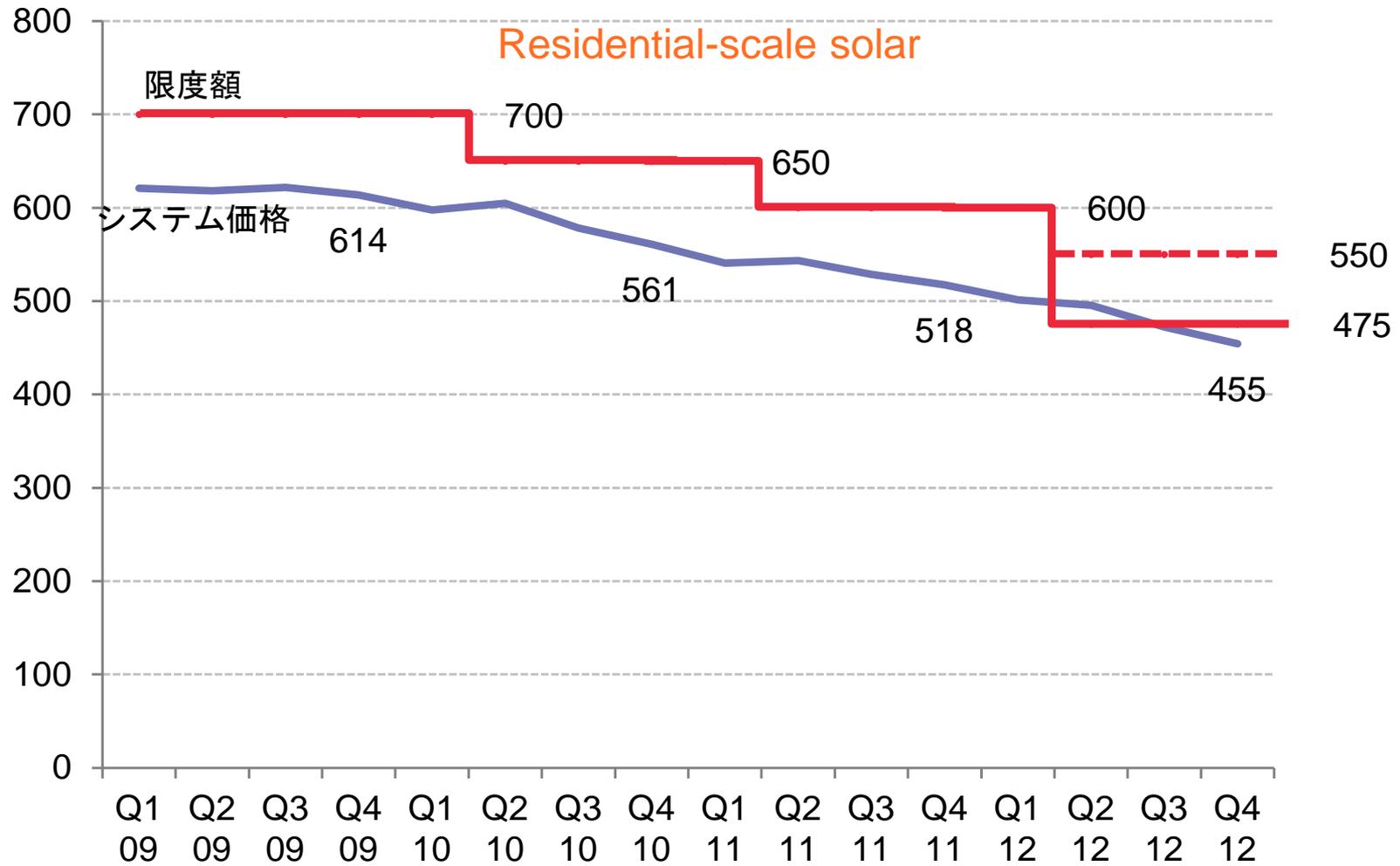
# 月別国内再生可能エネルギープロジェクト 発表日2011年1月-2013年1月 (MW, プロジェクト数)



Note: Data as of 12 February 2013. B&W=biomass and waste. Projects less than 1MW are not included. Projects without specific site information are not included.

Source: Bloomberg New Energy Finance

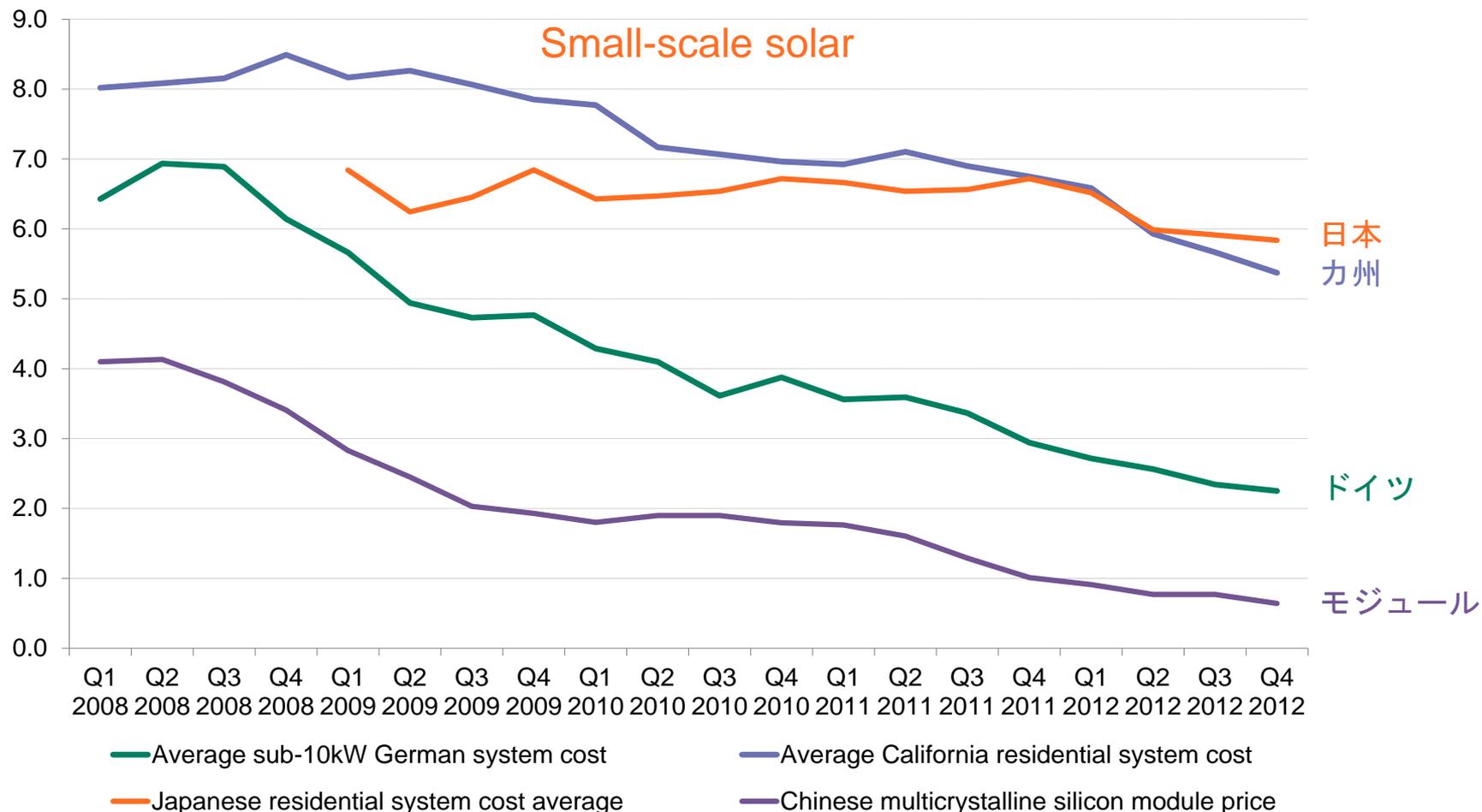
# 住宅用太陽光システム価格と補助金対象限度額(JPY/W)



Note: Red line represents system cost threshold for subsidy application. As of April 2012 national cash subsidy is JPY30/W for system up to JPY550/W. If the system cost is up to JPY475/W, extra JPY50/W shall be subsidised as well.

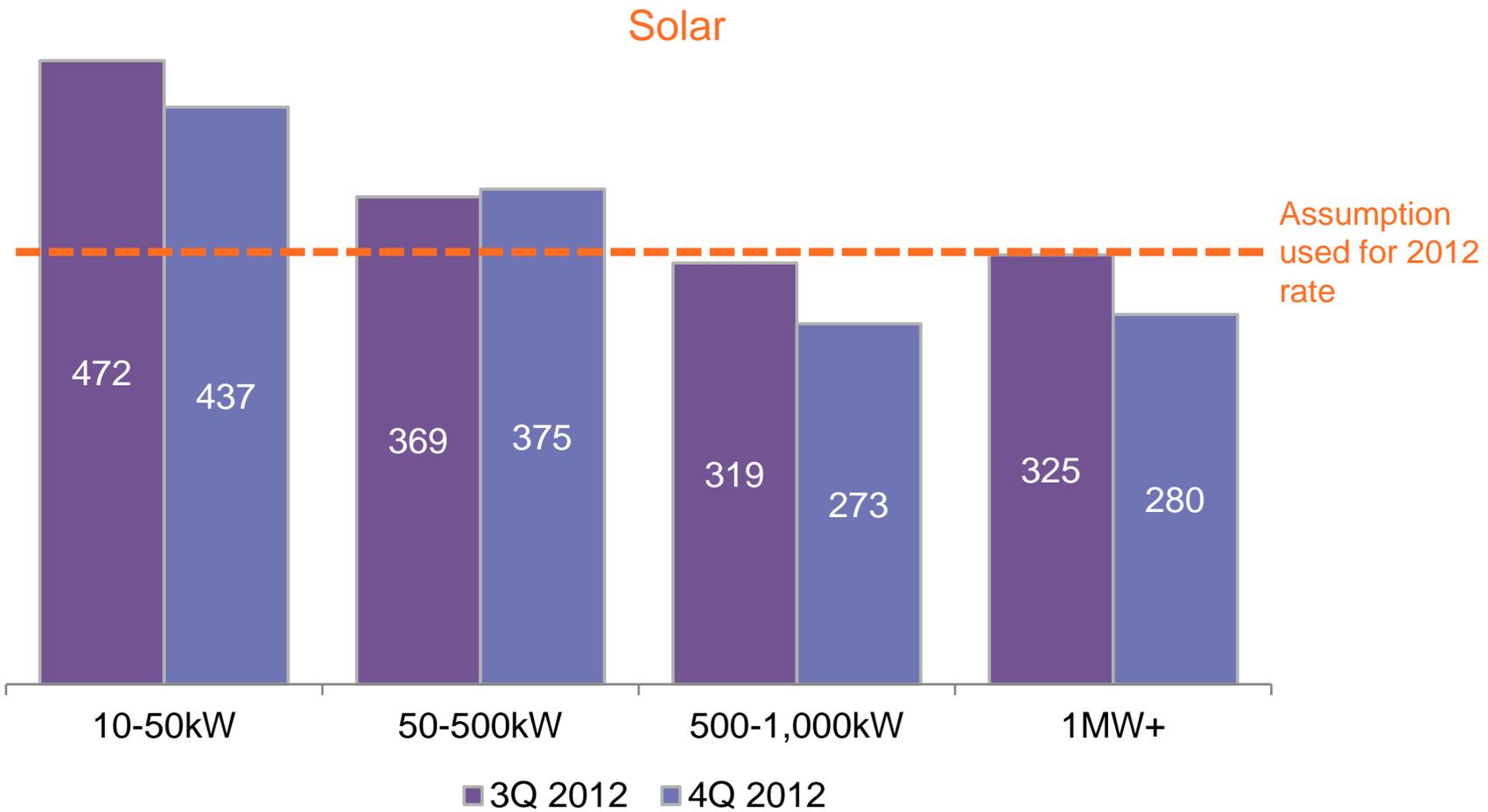
Source: J-PEC, ANRE/METI

# 日本・ドイツ・米カリフォルニア州小規模太陽光システム価格 2008年第1四半期-2012年第4四半期 (\$/W)



Source: BSW-Solar, California Solar Initiative filings, JPEA, Bloomberg New Energy Finance

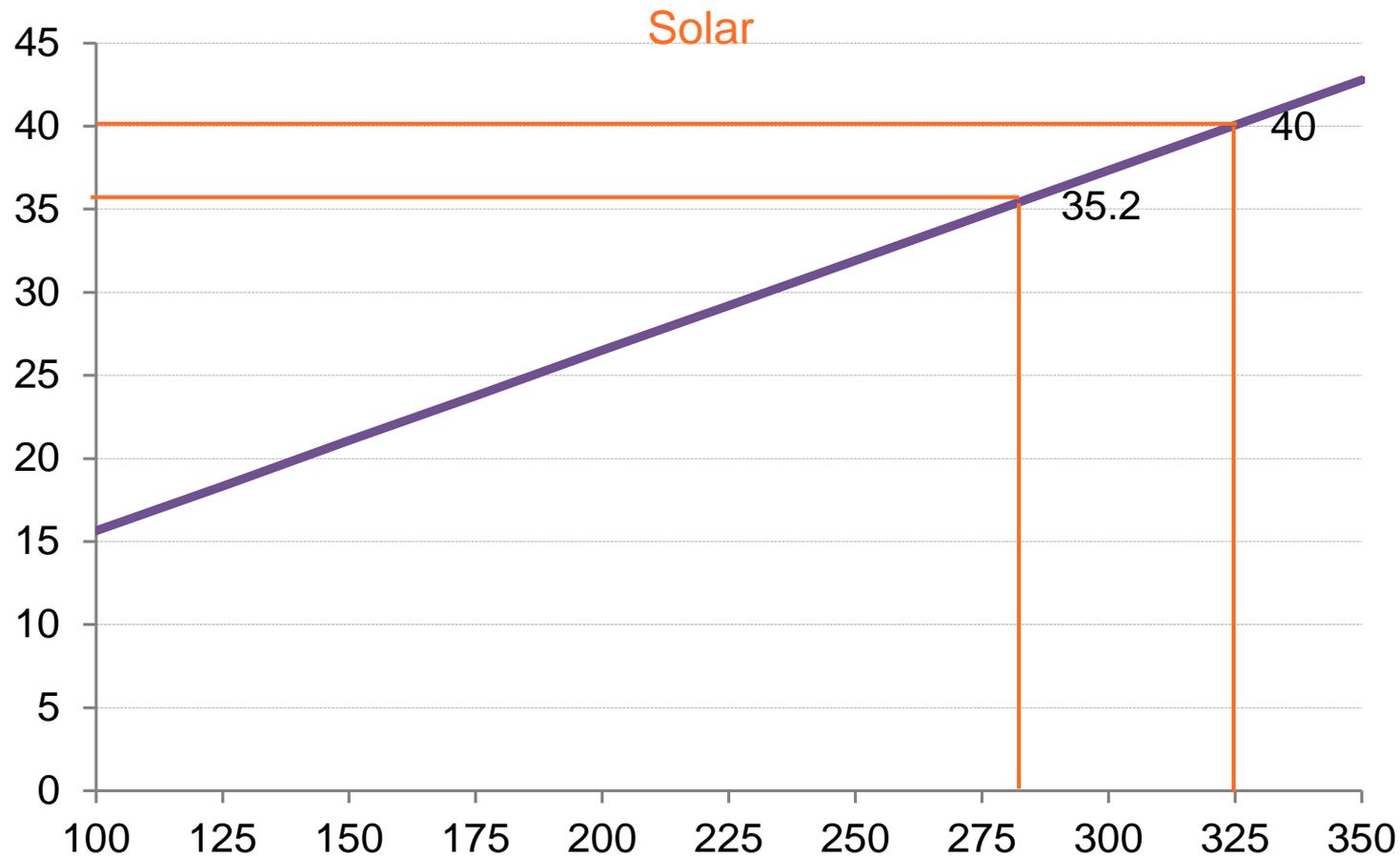
# 太陽光認定設備規模別コスト推移、2012年第3・4四半期 (JPY/W)



Note: Cost of FIT approved projects, 3Q-4Q 2012. 4Q 2012 excludes December.

Source: 21 January 2013, METI

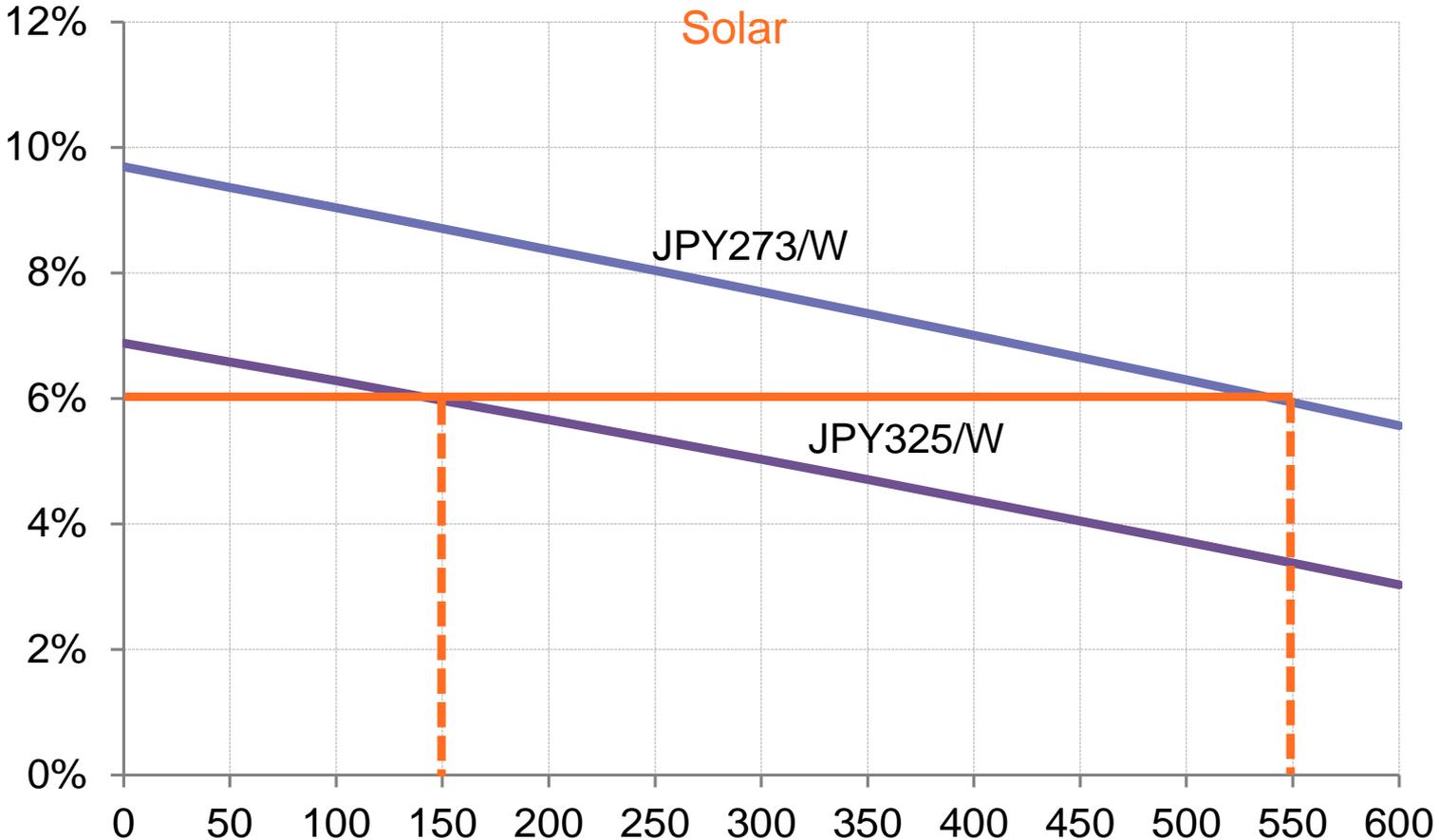
# 太陽光システム単価と買取価格推計 (JPY/kWh, JPY/W)



Note: Project IRR=6%. Bloomberg New Energy Finance has modeled tariff pricing based on assumptions the pricing committee uses.

Source: Bloomberg New Energy Finance

# 現行買取価格における太陽光システム単価・土地リース単価の変化とプロジェクトIRR (% , JPY/M2・YEAR)



Note: Bloomberg New Energy Finance has modeled tariff pricing based on assumptions the pricing committee uses. Vertical axis represents target project IRRs. Horizontal axis represents leasing cost per square meter.

Source: Bloomberg New Energy Finance

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# 再生可能エネルギーのコスト

# COST OF RENEWABLE ENERGY

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## MARKETS

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