

世界の電力市場見通し

気候変動に関する有識者会合 第一回

黒崎 美穂

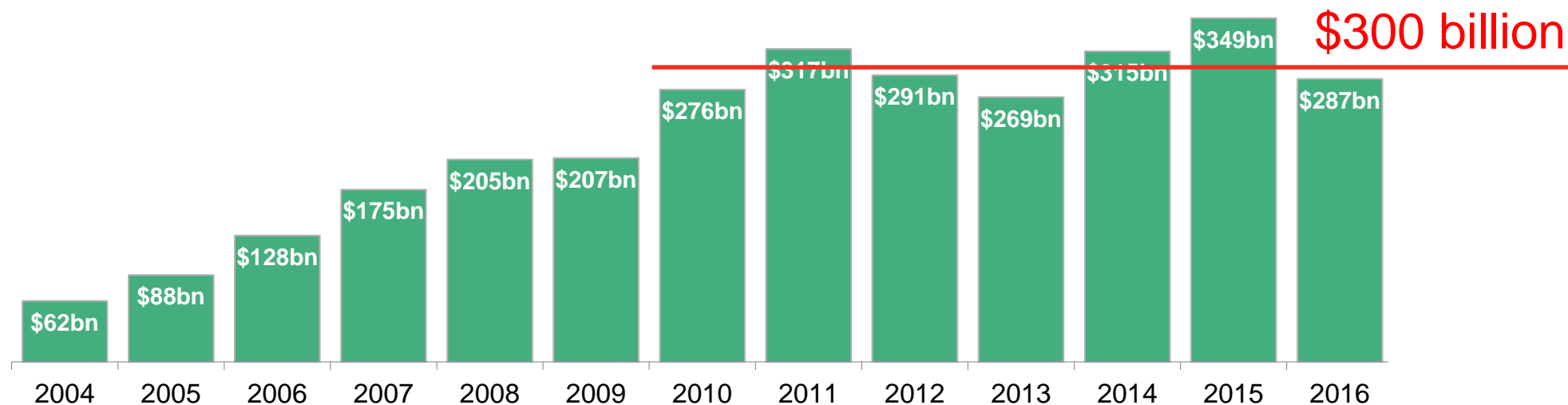
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Bloomberg
New Energy Finance

世界の電力市場見通し

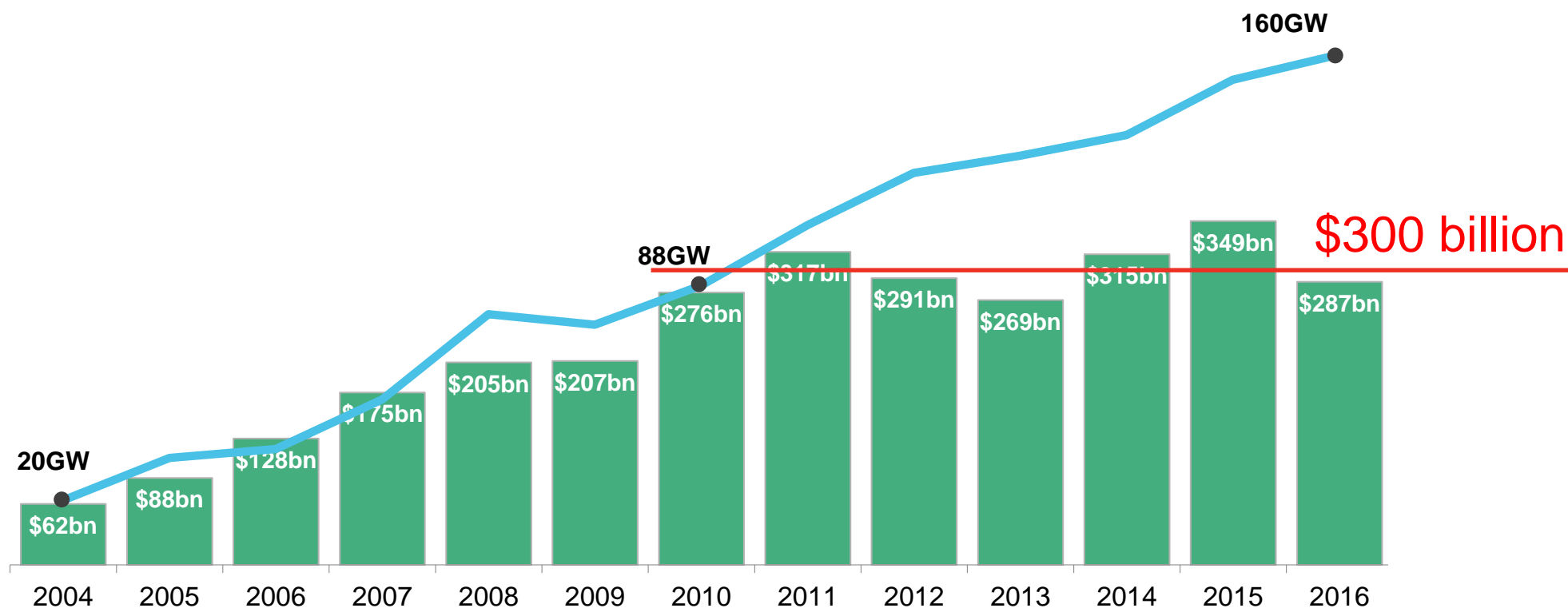
クリーンエネルギー投資と設備導入量

クリーンエネルギー新規投資額



Total values include estimates for undisclosed deals. Includes corporate and government R&D, and spending for digital energy and energy storage projects (not reported in quarterly statistics). Excludes large hydro.

クリーンエネルギー新規投資額と設備容量

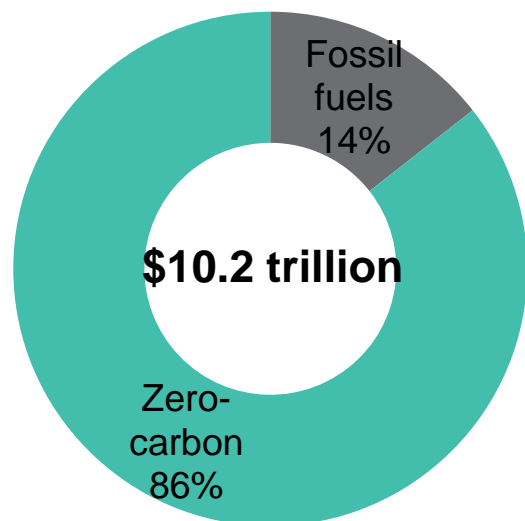


Total values include estimates for undisclosed deals. Includes corporate and government R&D, and spending for digital energy and energy storage projects (not reported in quarterly statistics). Excludes large hydro.

2040年までの電力市場への投資予測

太陽光と風力は総投資額の60%

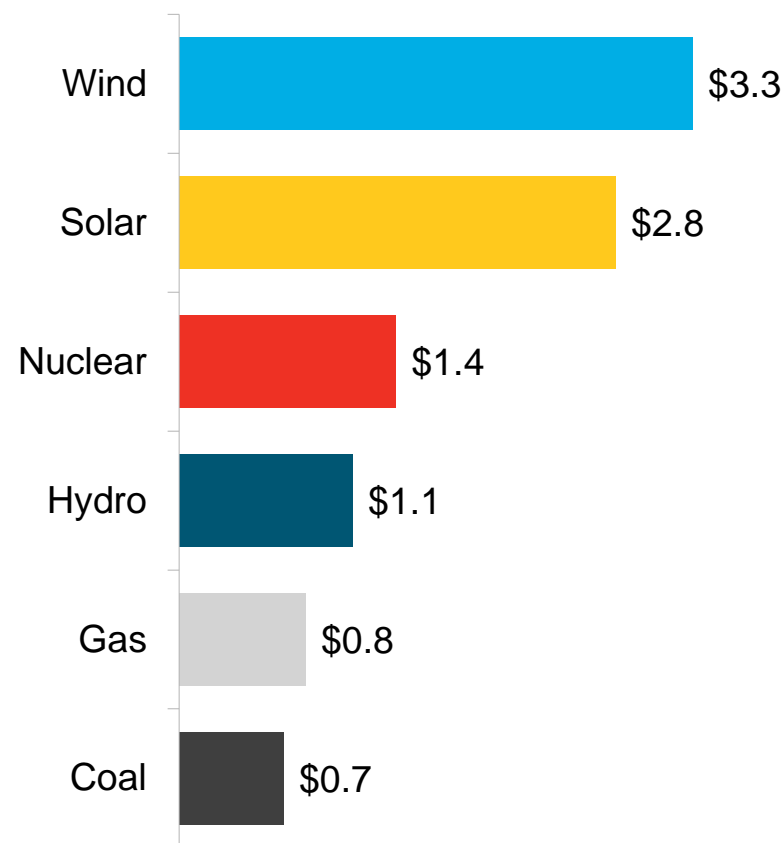
Investment, by technology, 2017-2040



Source: Bloomberg New Energy Finance

Investment, by technology, 2017-2040

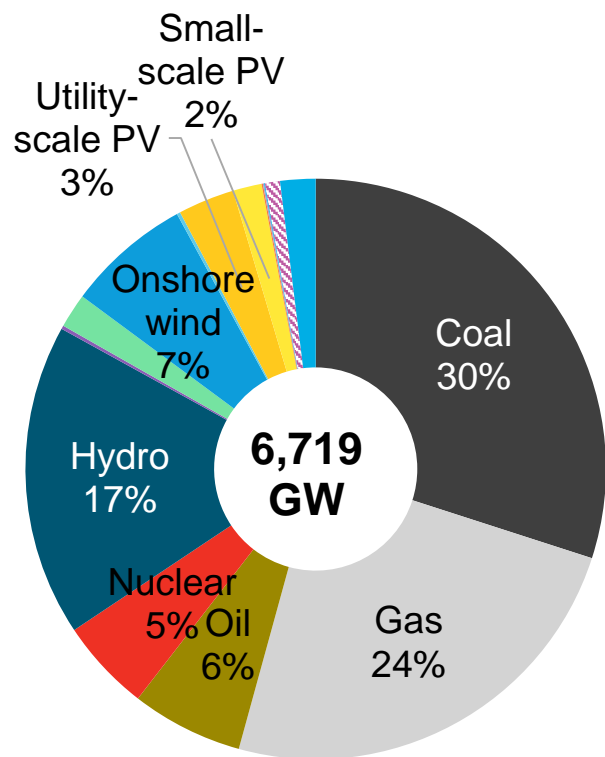
(\$ trillion - 2016 real)



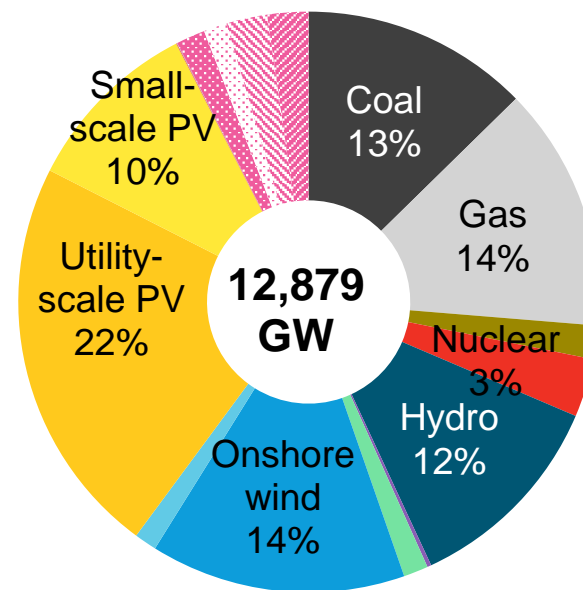
Source: Bloomberg New Energy Finance

太陽光と風力が世界の主な電源構成を占める

Global cumulative installed capacity: 2016



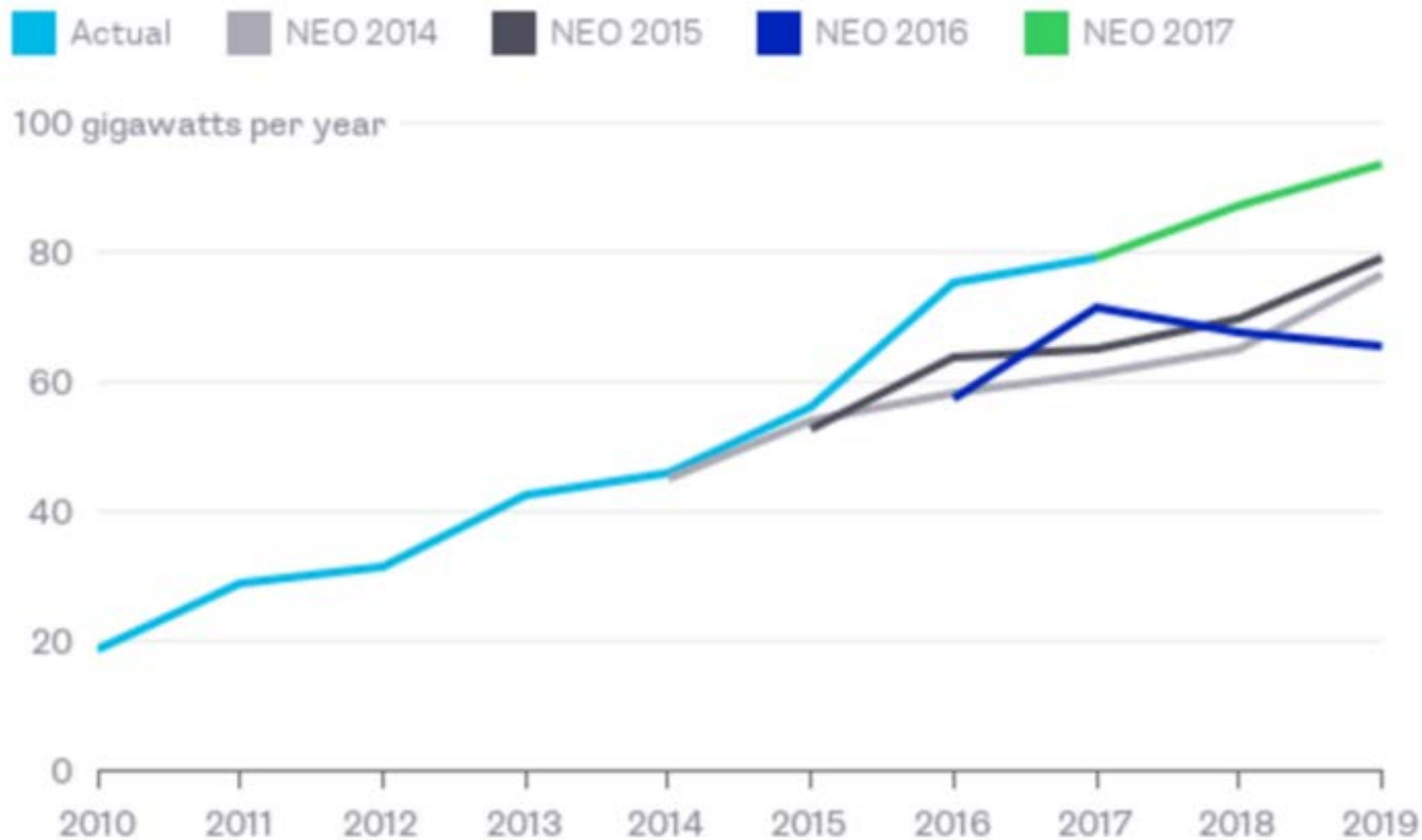
Global cumulative installed capacity: 2040



Source: Bloomberg New Energy Finance

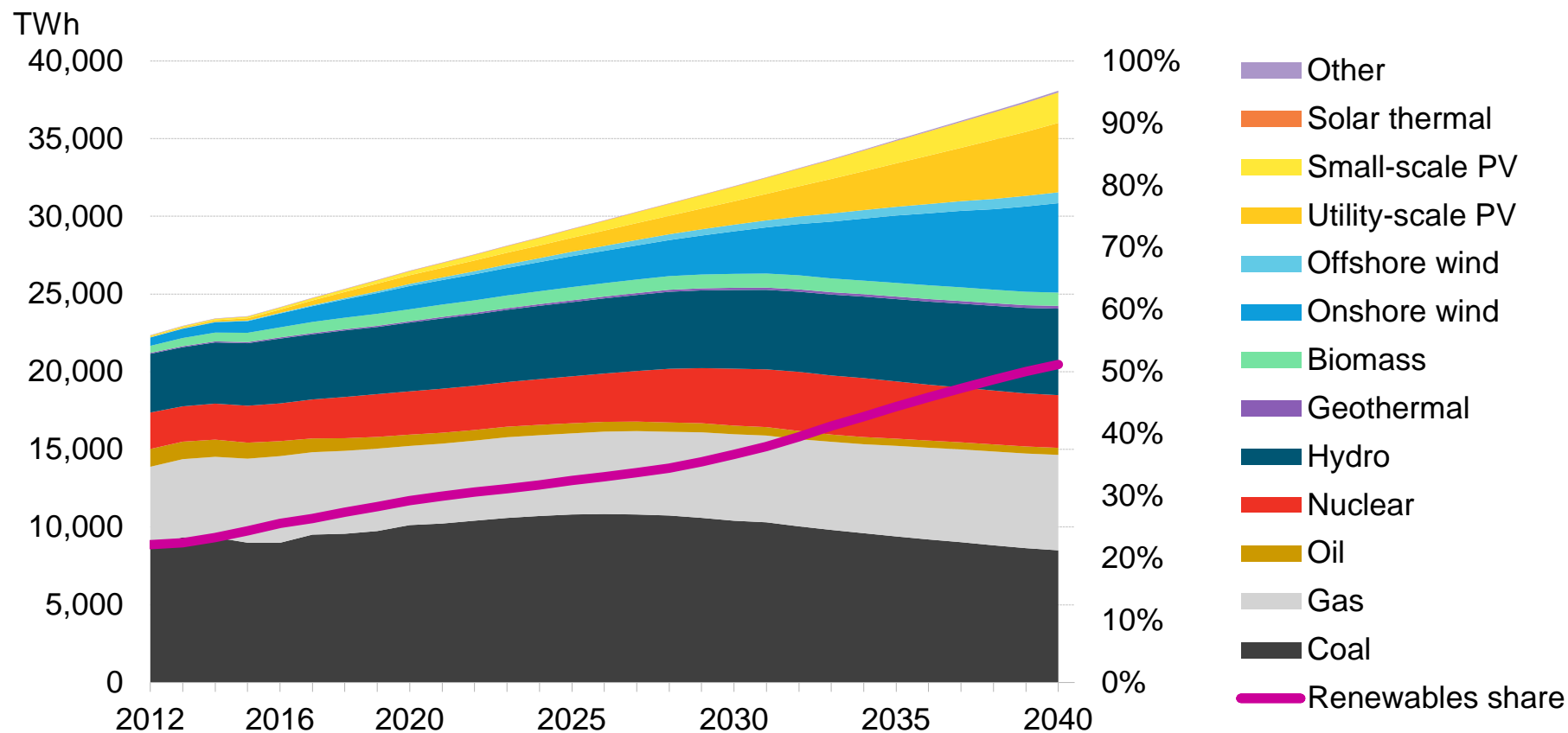
Source: Bloomberg New Energy Finance

BNEFの予測よりも実際の導入量が毎年上回る



Source: Bloomberg New Energy Finance

発電量ミックス 石炭は2026年にピークを迎える



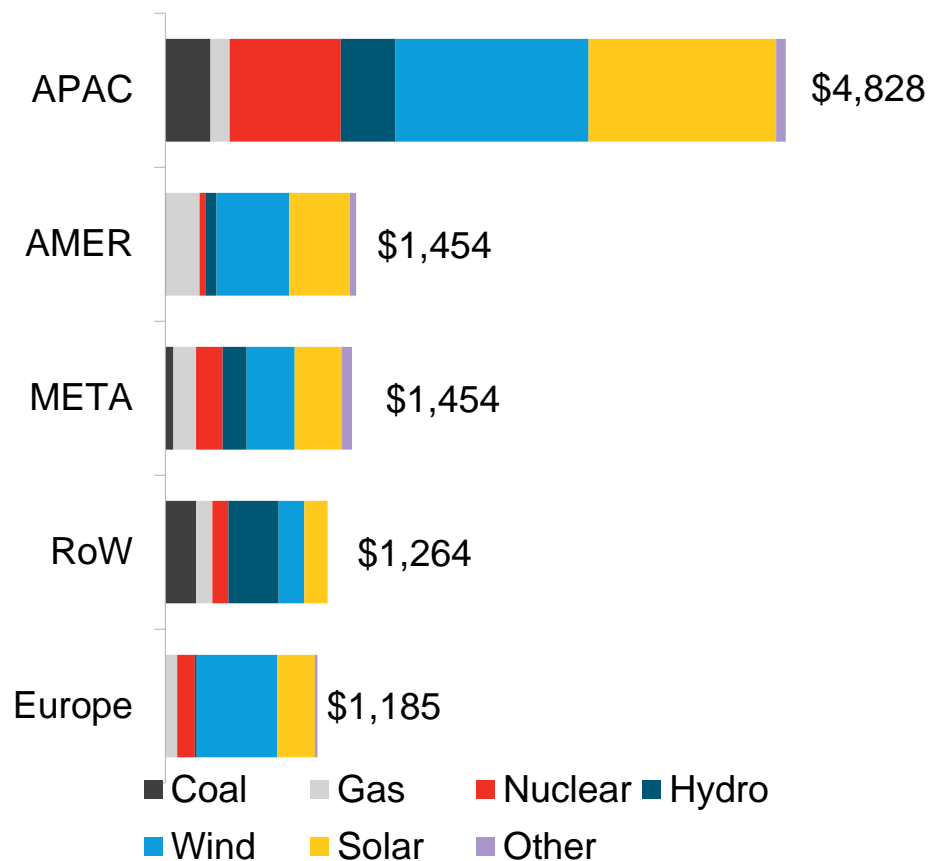
Source: Bloomberg New Energy Finance New Energy Outlook 2017

アジア太平洋地域: 全投資額の47%

中国とインド: アジア太平洋の83%

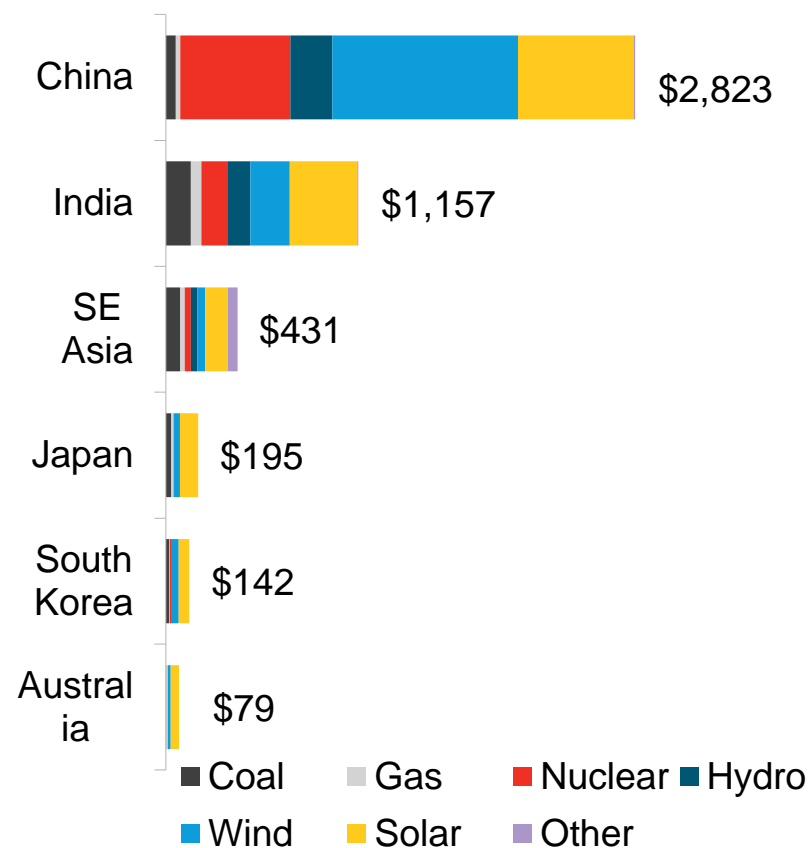
Global investment by region, 2017-2040

(\$ billion - 2016 real)



APAC investment by region, 2017-2040

(\$ billion - 2016 real)

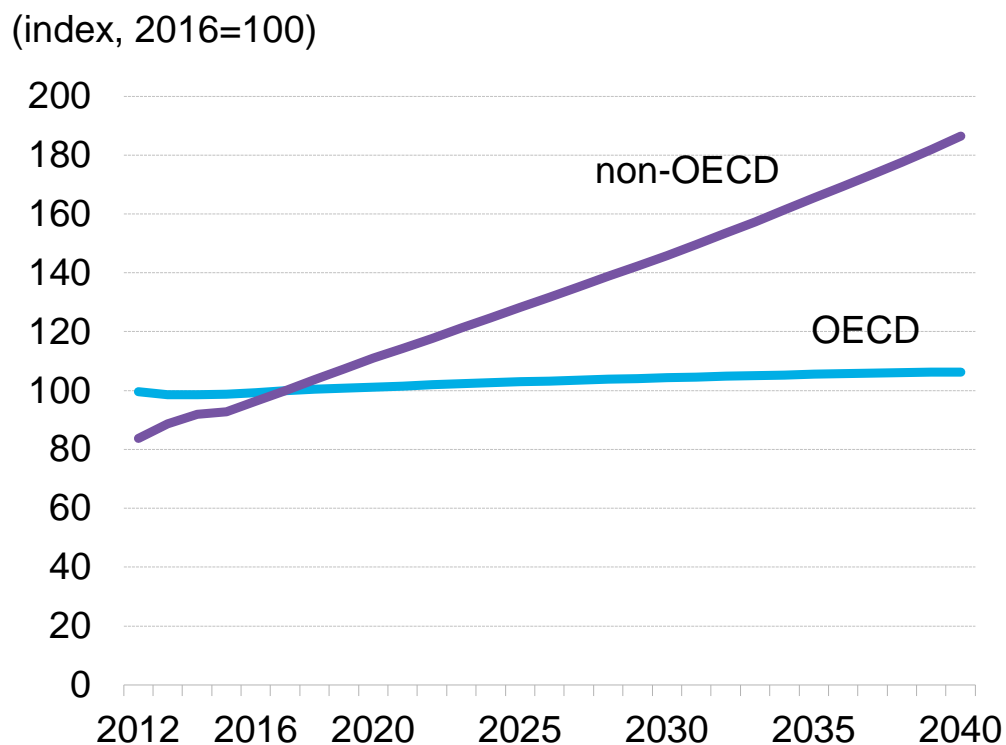


Source: Bloomberg New Energy Finance

Source: Bloomberg New Energy Finance

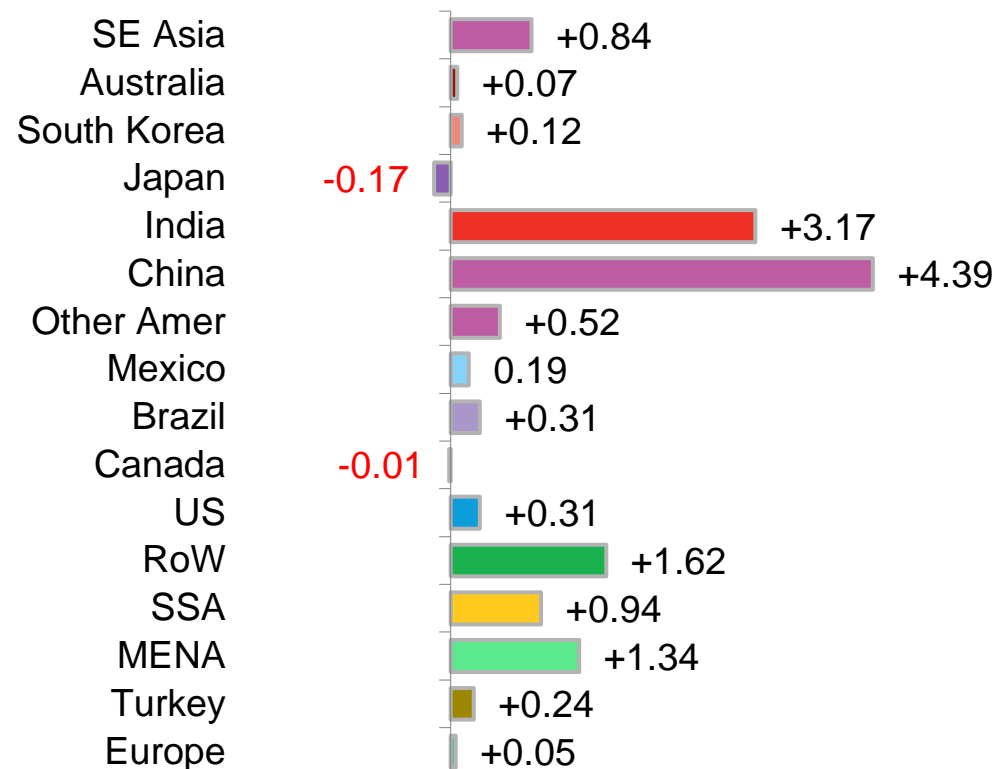
世界全体の電力需要

Global electricity demand, OECD vs non-OECD



Source: Bloomberg New Energy Finance

Changes in electricity demand, 2016-2040 (1,000 TWh)



Source: Bloomberg New Energy Finance

2040年再生可能エネルギー 導入率ランキング



Country	All renewables	Country	PV and wind
Italy	96%	Mexico	73%
Brazil	96%	Iberia	63%
Iberia	86%	Germany	61%
Chile	86%	Italy	59%
Mexico	82%	Chile	55%
Canada	79%	Australia	55%
Germany	74%	UK	50%
France	65%	France	46%
UK	63%	Brazil	43%
Australia	62%	India	41%
China	55%	China	39%
India	49%	Thailand	39%
Thailand	49%	SSA	34%
Turkey	48%	South Korea	32%
Philippines	47%	United States	31%
Japan	42%	Japan	30%
United States	38%	Philippines	30%
Malaysia	37%	Turkey	28%
South Korea	34%	MENA	27%
Indonesia	31%	Canada	24%

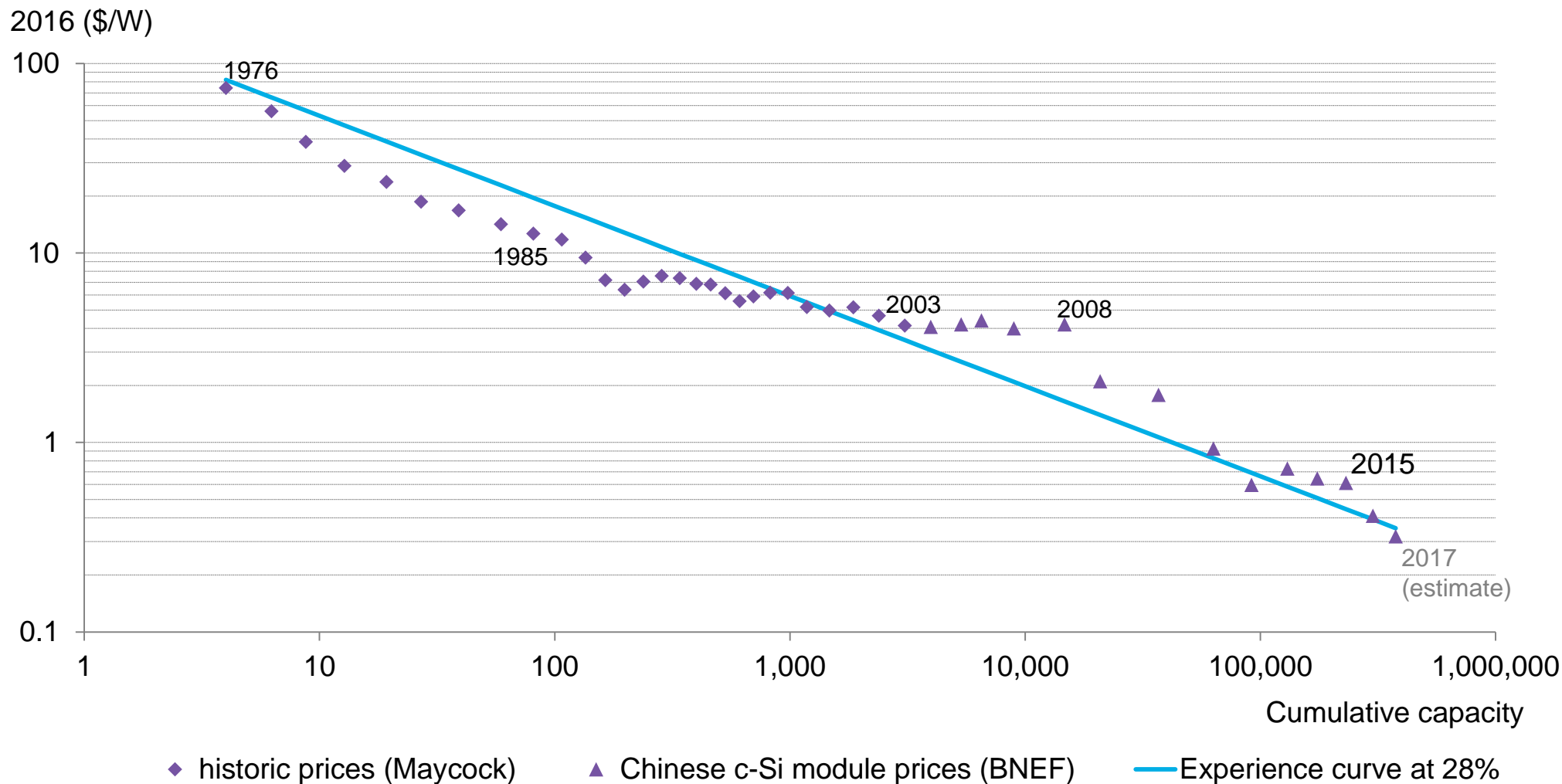
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Source: Bloomberg New Energy Finance

技術革新とコスト低減

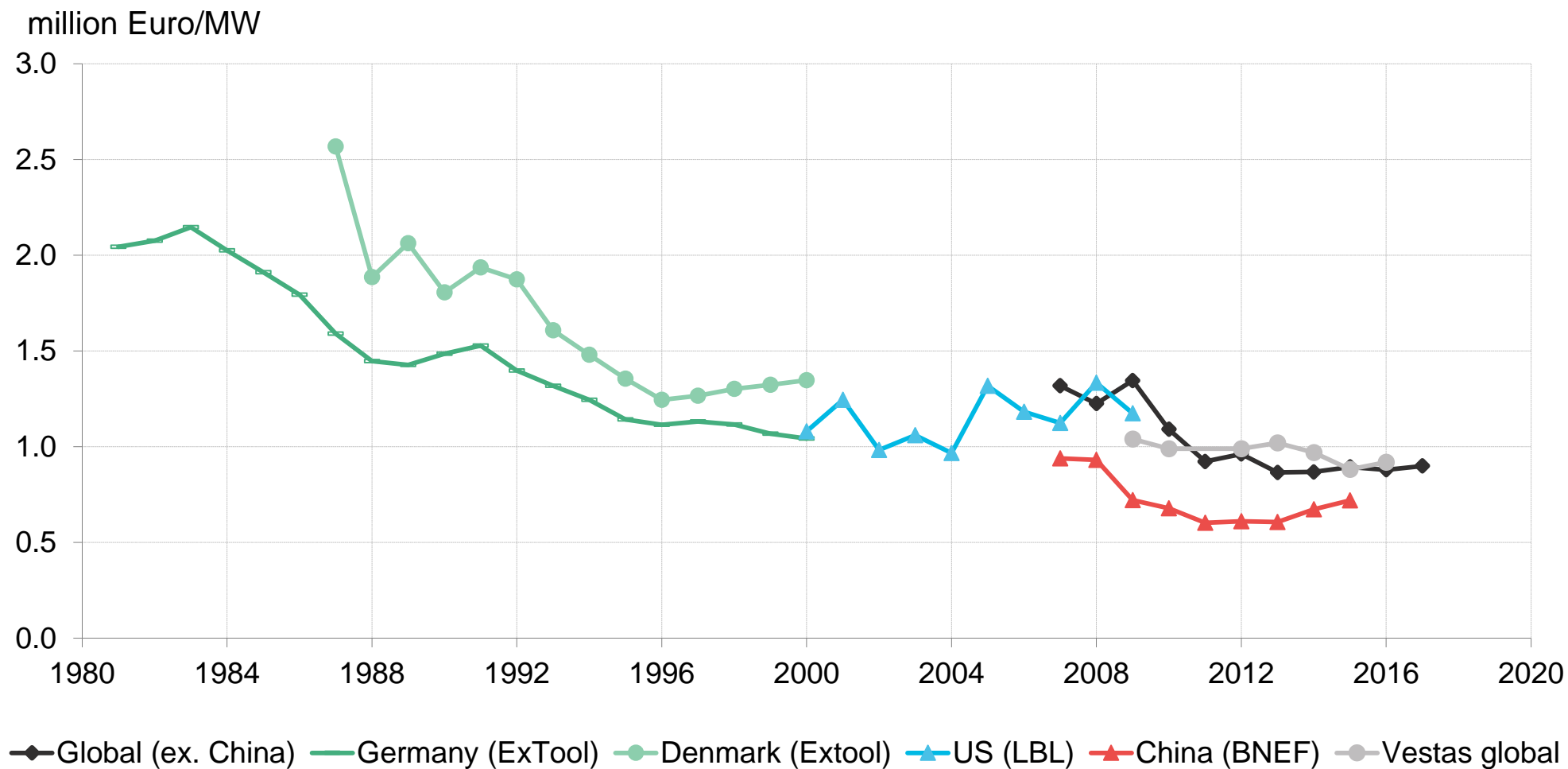
太陽光、風力、蓄電池
平準化発電コスト比較

太陽光発電技術は安くなり、 そのスピードも増す



Source: Maycock, Bloomberg New Energy Finance

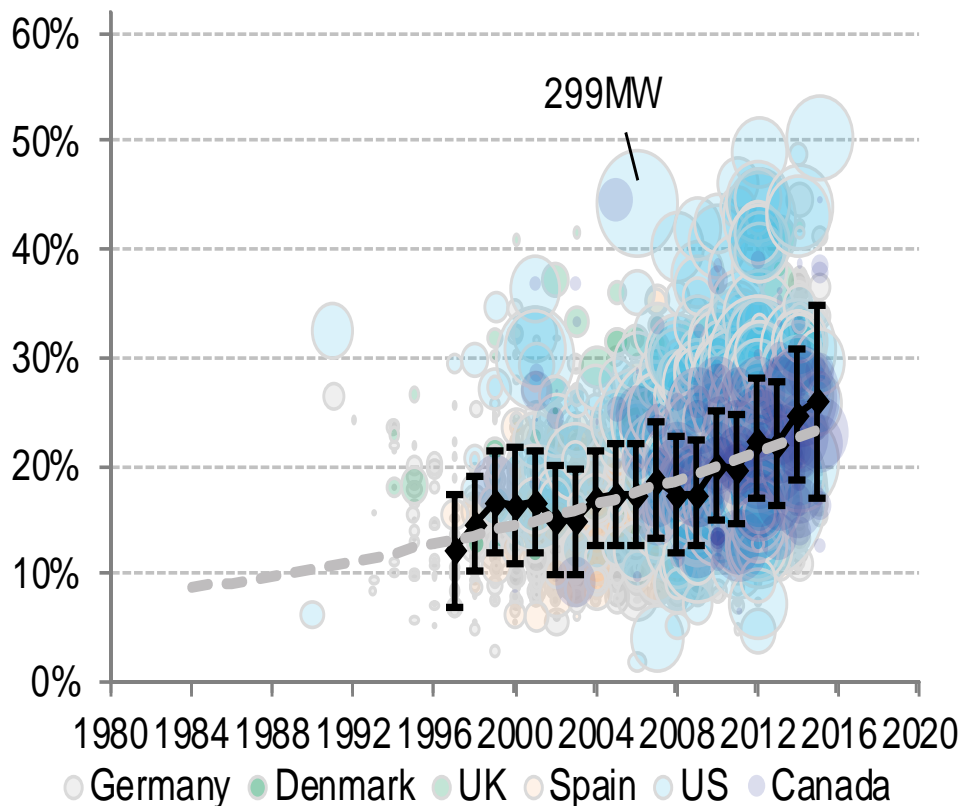
風力タービン価格（引渡し日）



Source: Bloomberg New Energy Finance Note: Data by contract signing date

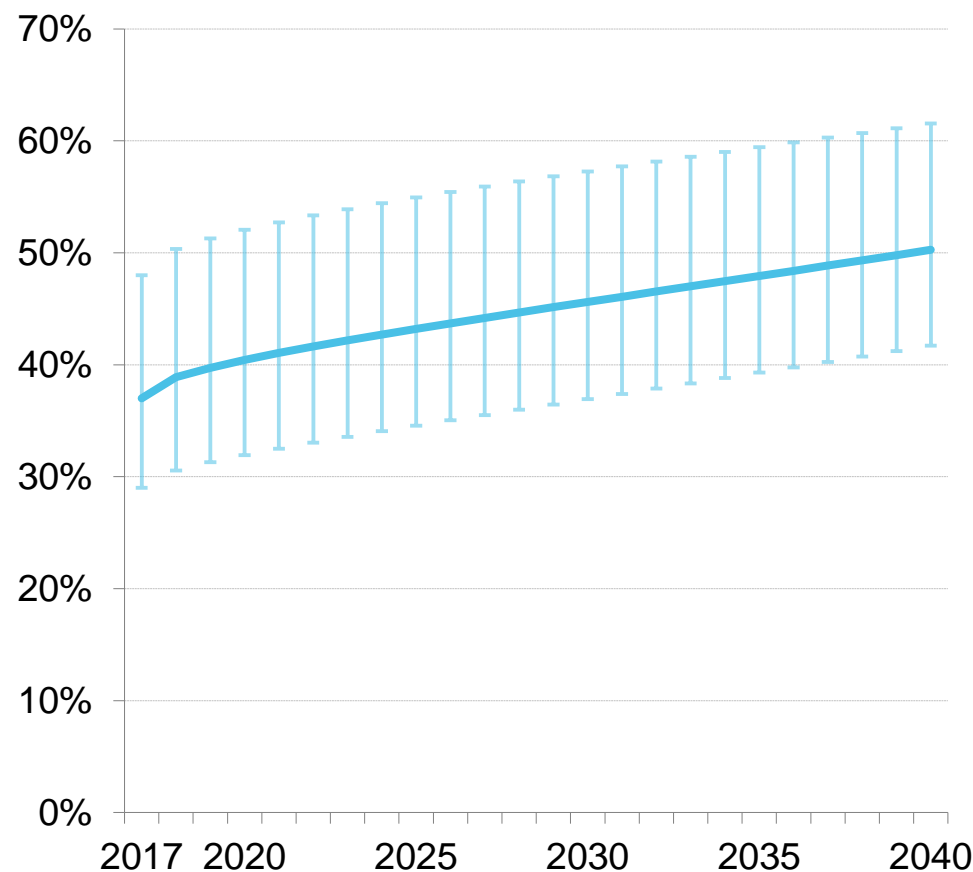
設備利用率上昇に伴い、 陸上風力発電コストが安価に

Onshore wind capacity factor



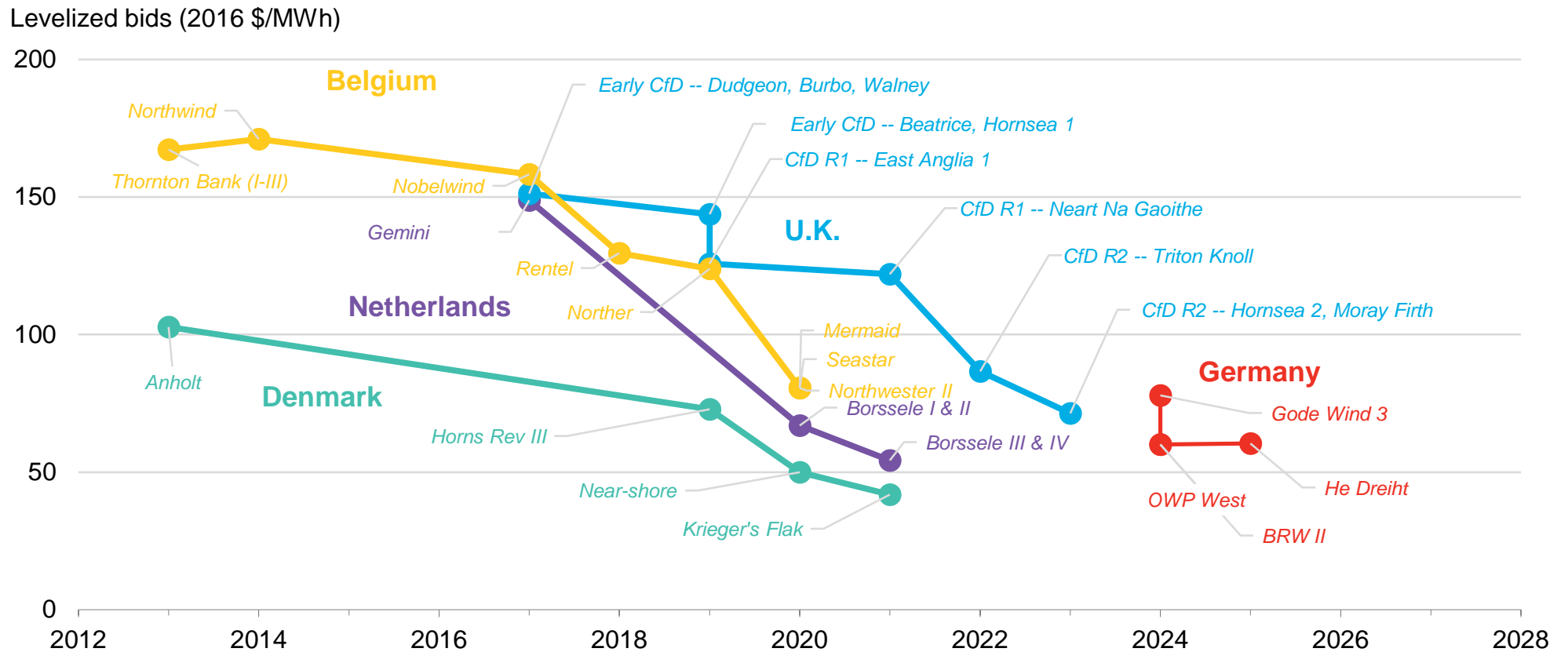
Source: Bloomberg New Energy Finance Note: Note: Averages are capacity-weighted. We calculate the capacity factor with our proprietary [Wind Farm Capacity Factor Tool](#) using real project data and wind resource data provided by 3TIER by Vaisala. We assume P90 value in the capacity factor tool.

Capacity factor forecast for the U.S



Source: Bloomberg New Energy Finance Notes: Line shows central case, error bars reflect the range between low speed and high speed sites

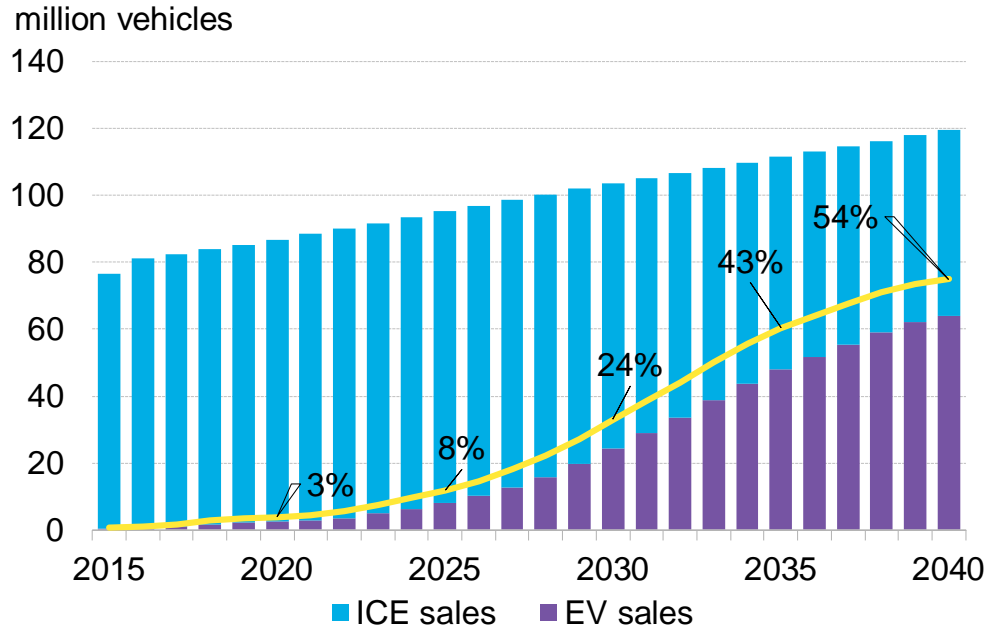
洋上風力入札結果



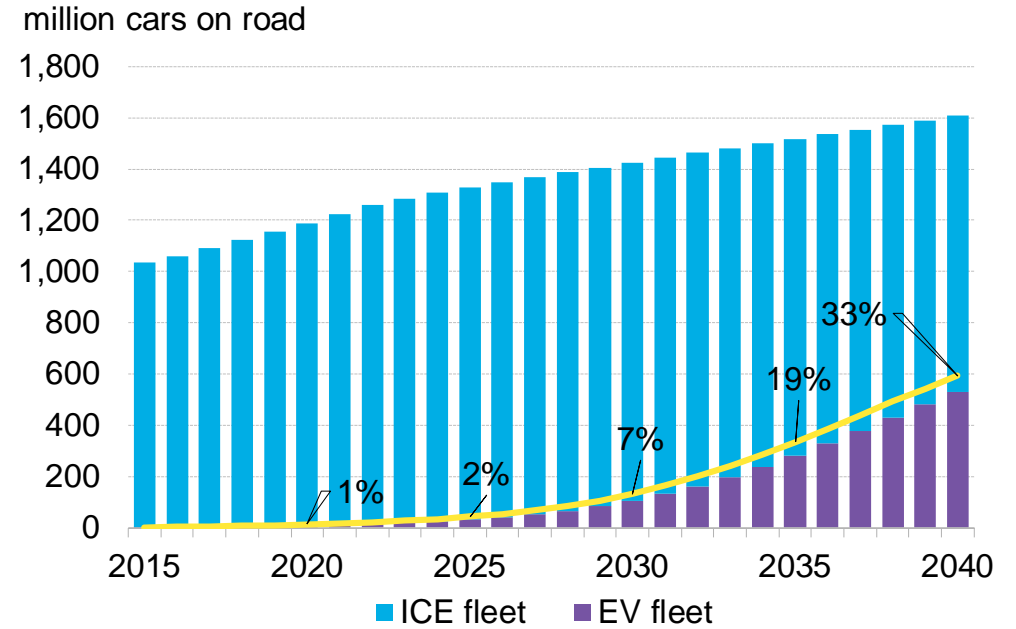
Source: Bloomberg New Energy Finance. Notes: Figures refer to an estimated project LCOE, taking into account tariff, inflation, merchant tail assumption and a 23-year project lifetime. Horizontal axis refers to commissioning year.

電気自動車導入予測 2040

Annual global light duty vehicle sales



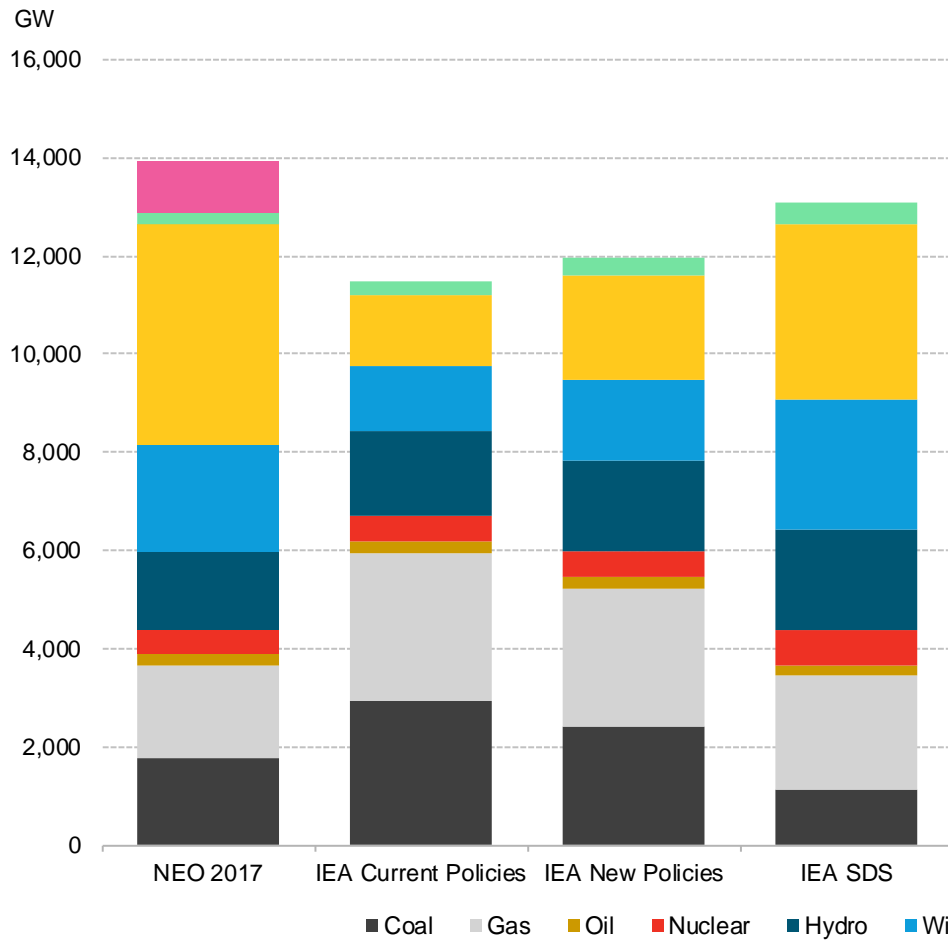
Global light duty vehicle fleet



Source: Bloomberg New Energy Finance EVO 2017

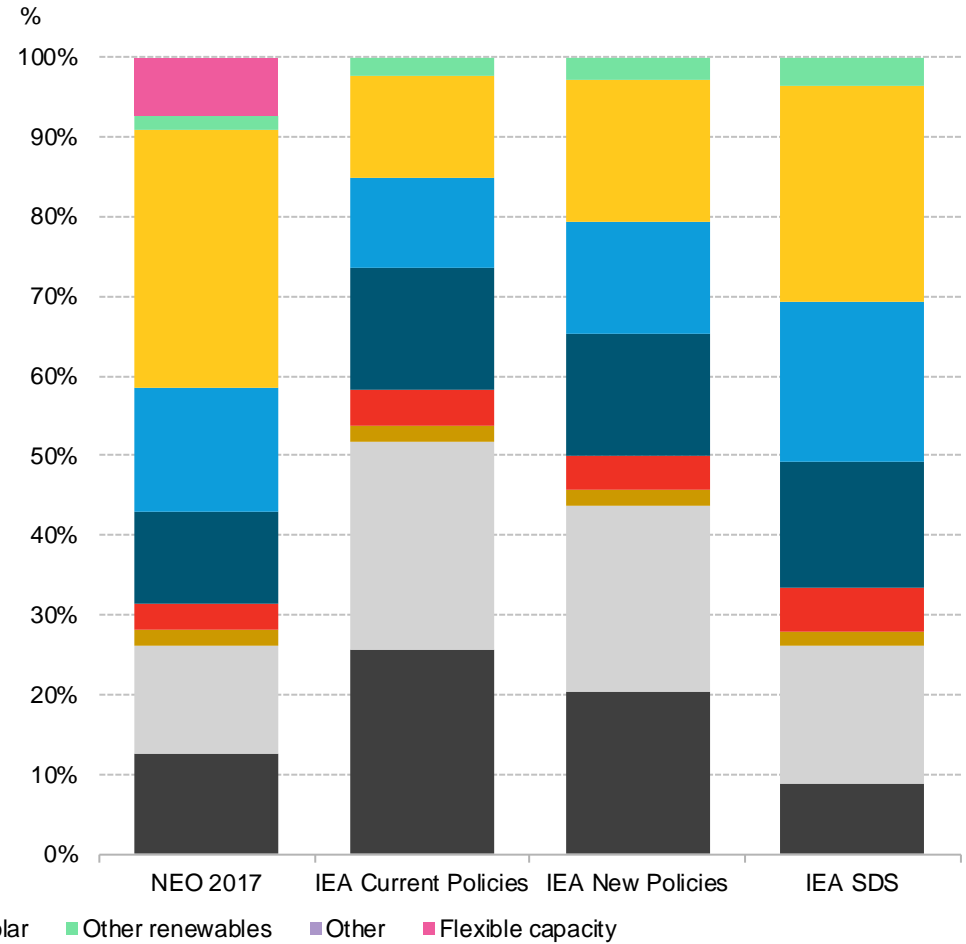
IEA WEOとの比較 Capacity by 2040

Installed capacity by technology, absolute



Source: Bloomberg New Energy Finance, IEA; Note: solar includes PV & solar thermal; wind includes onshore and offshore wind.

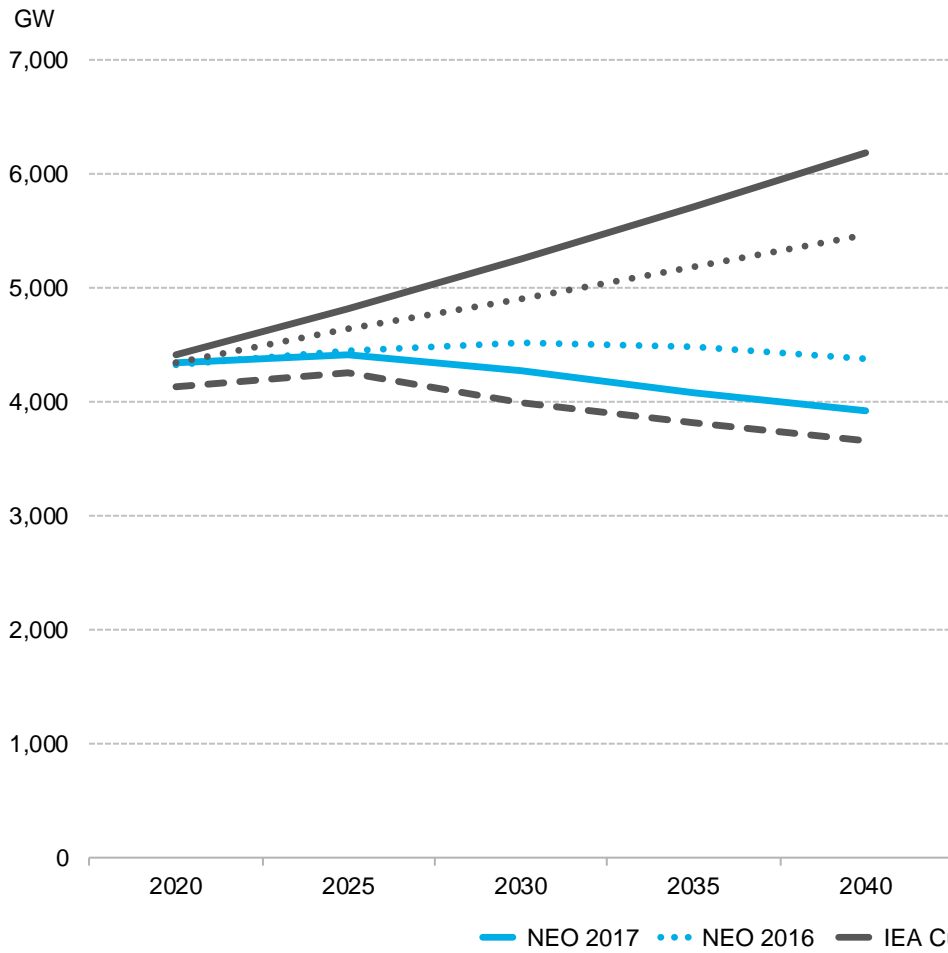
Installed capacity by technology, shares



Source: Bloomberg New Energy Finance, IEA.

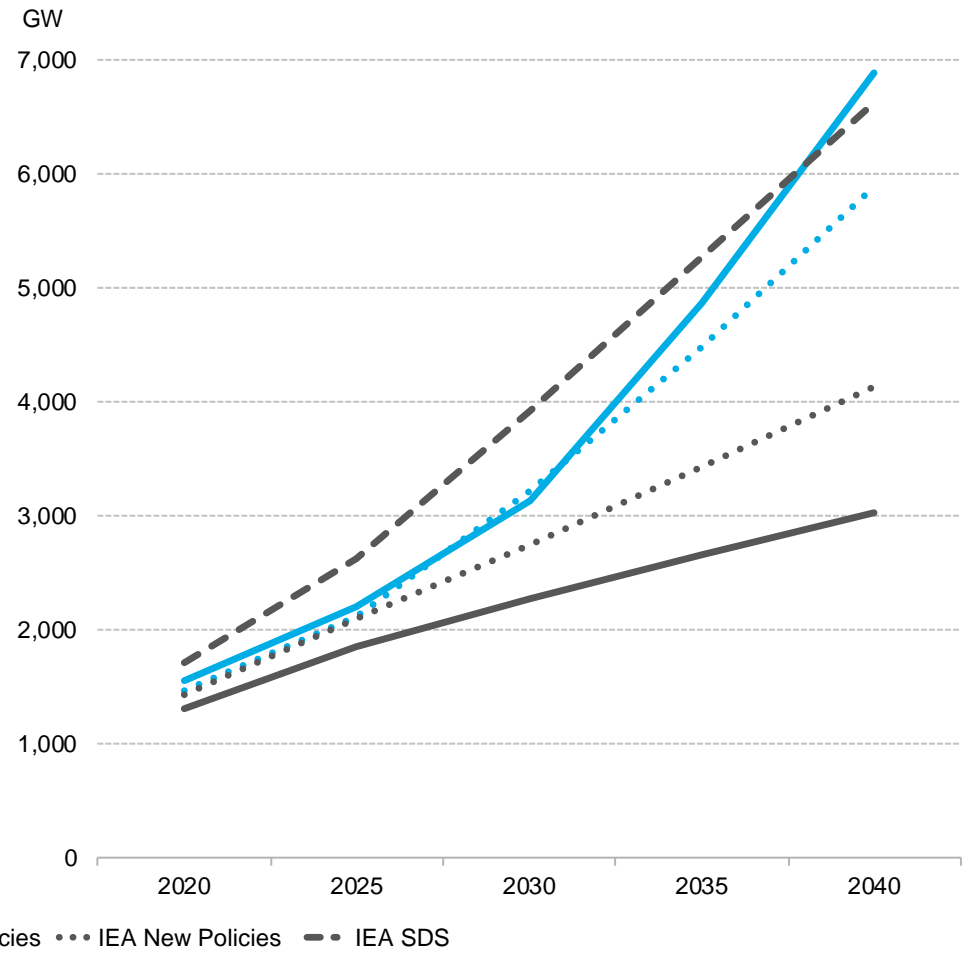
IEAとの比較 化石燃料火力と再生可能エネルギー 設備容量

Fossil fuel cumulative capacity



Source: Bloomberg New Energy Finance, IEA.

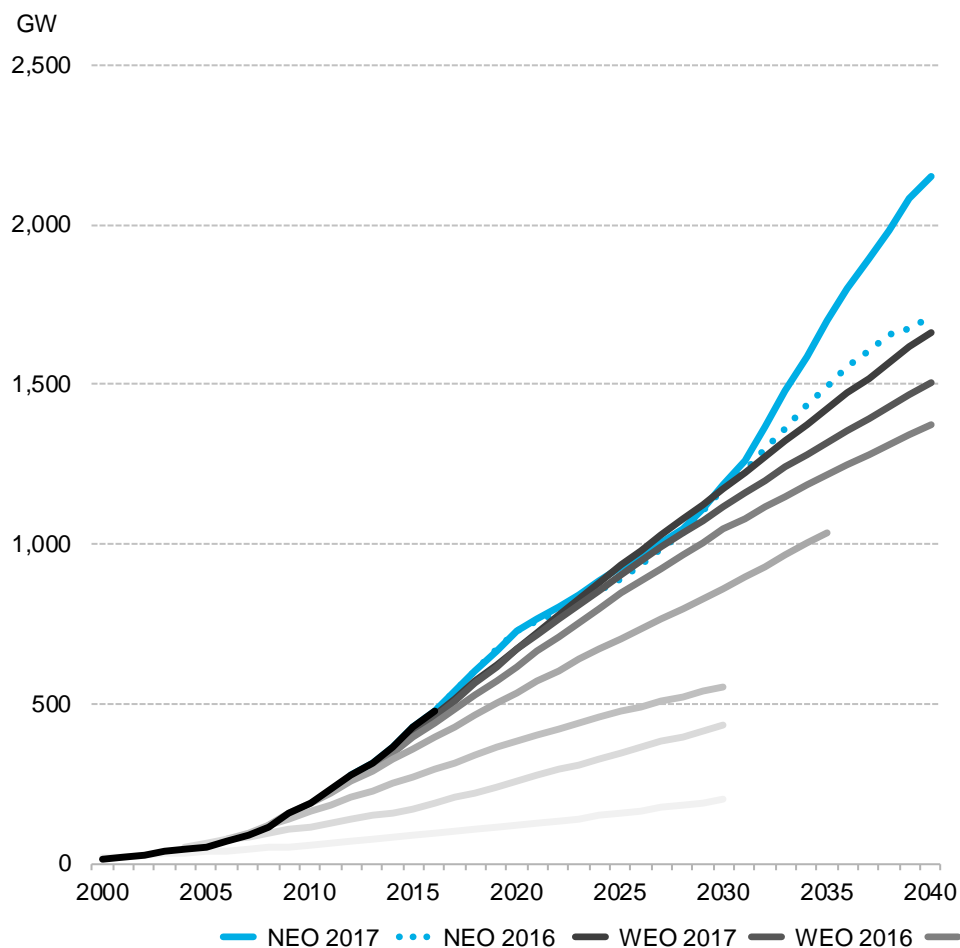
Renewables (excl. hydro) cumulative capacity



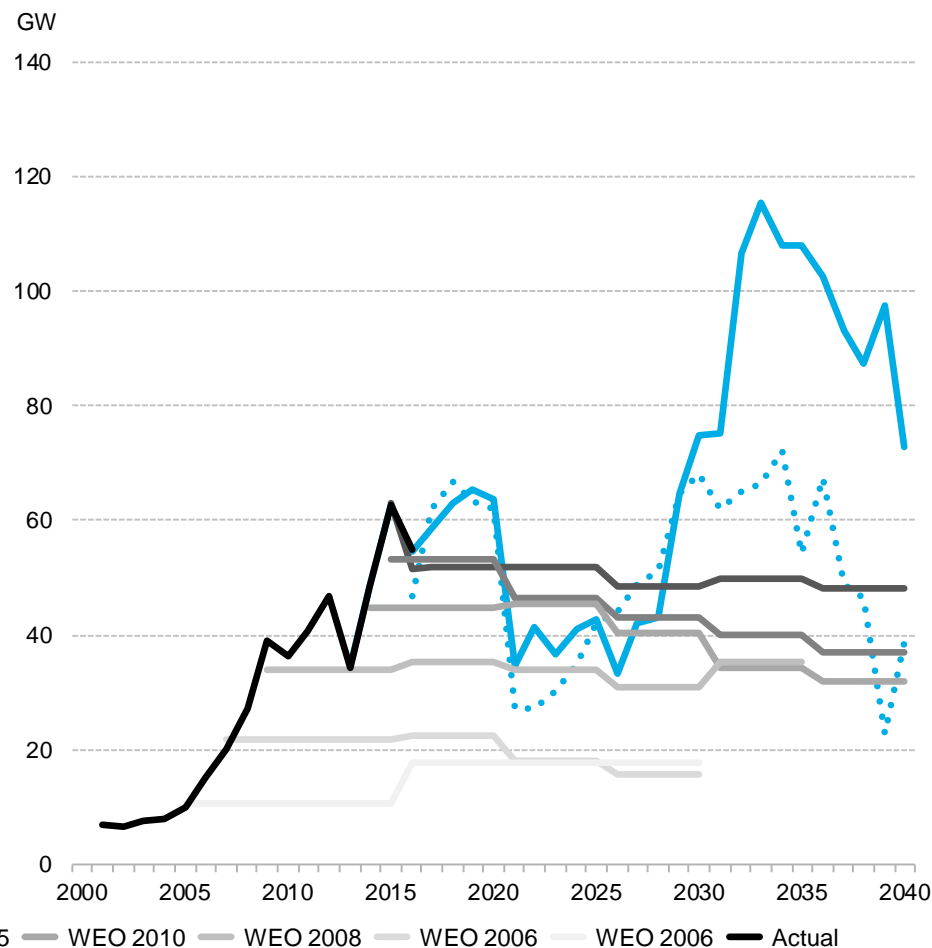
Source: Bloomberg New Energy Finance, IEA.

IEAとの比較 風力発電設備容量（累積導入量と新設）

Cumulative installed capacity



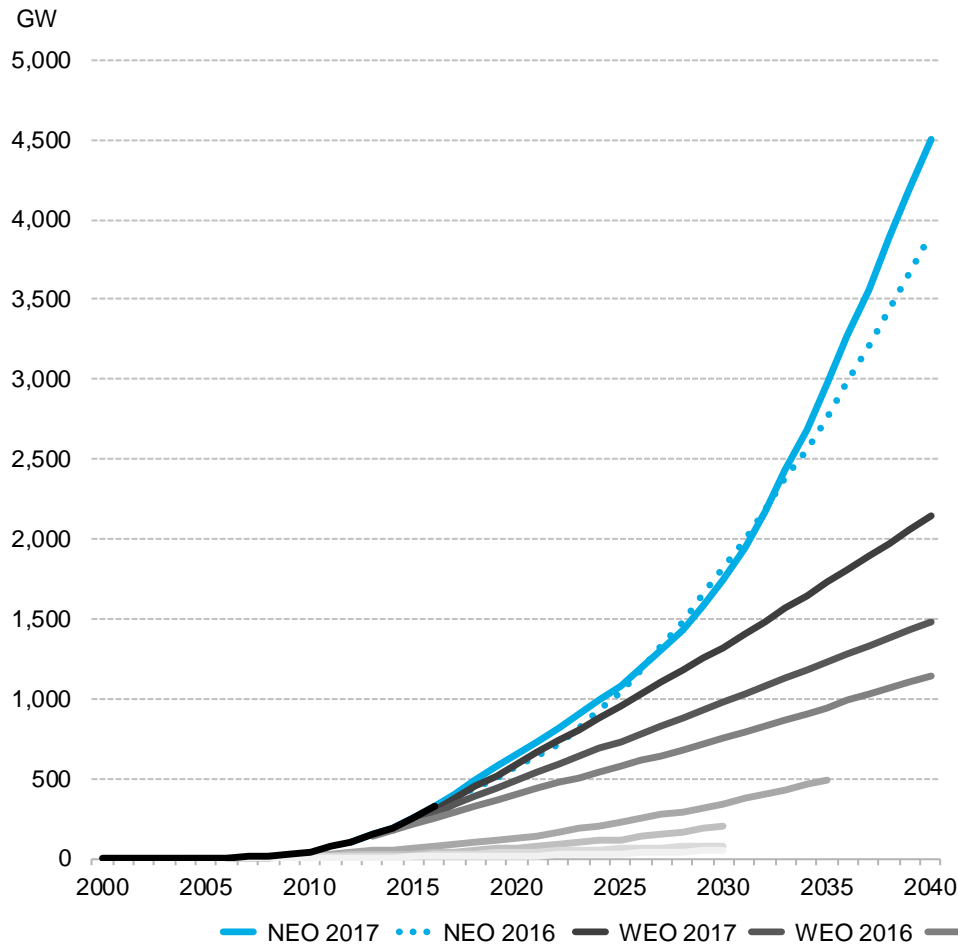
Net capacity additions per year



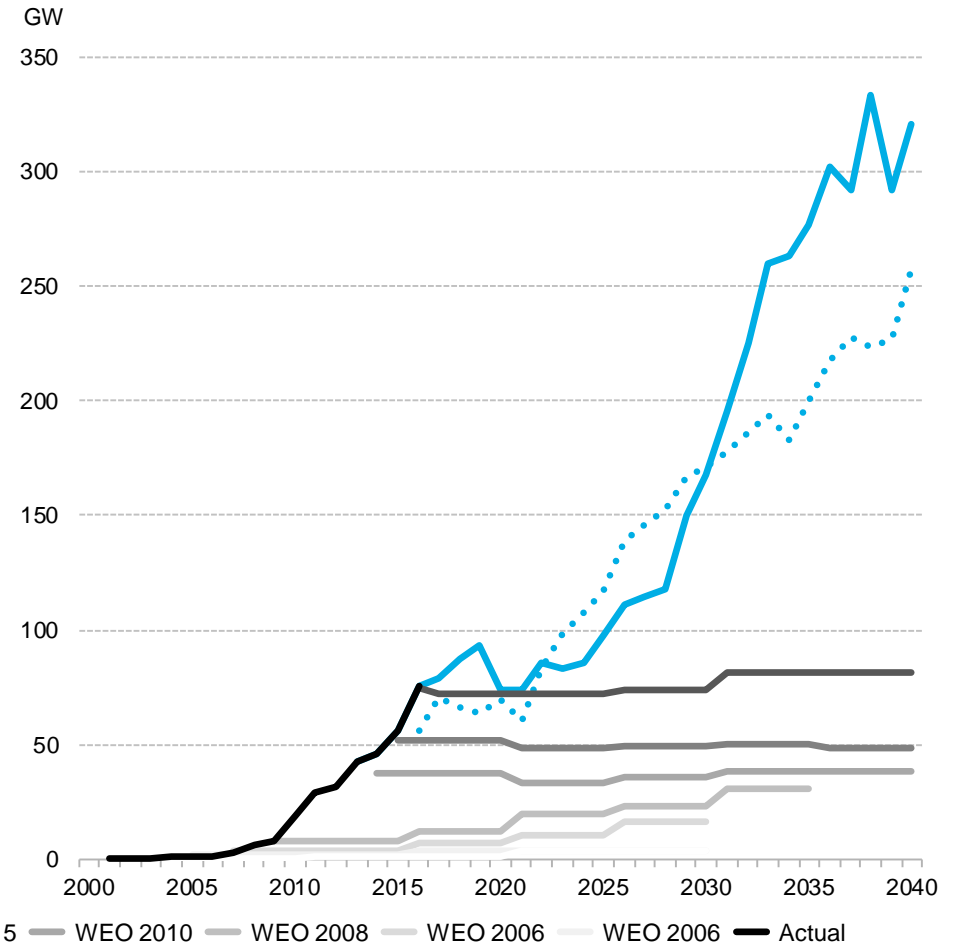
Source: Bloomberg New Energy Finance, IEA; Note: WEO 2002, 2006 & 2008 is Reference scenario; WEO 2010 - 2017 is **New Policies scenario**; wind includes onshore and offshore wind.

IEAとの比較 太陽光設備容量（累積と新設）

Cumulative installed capacity



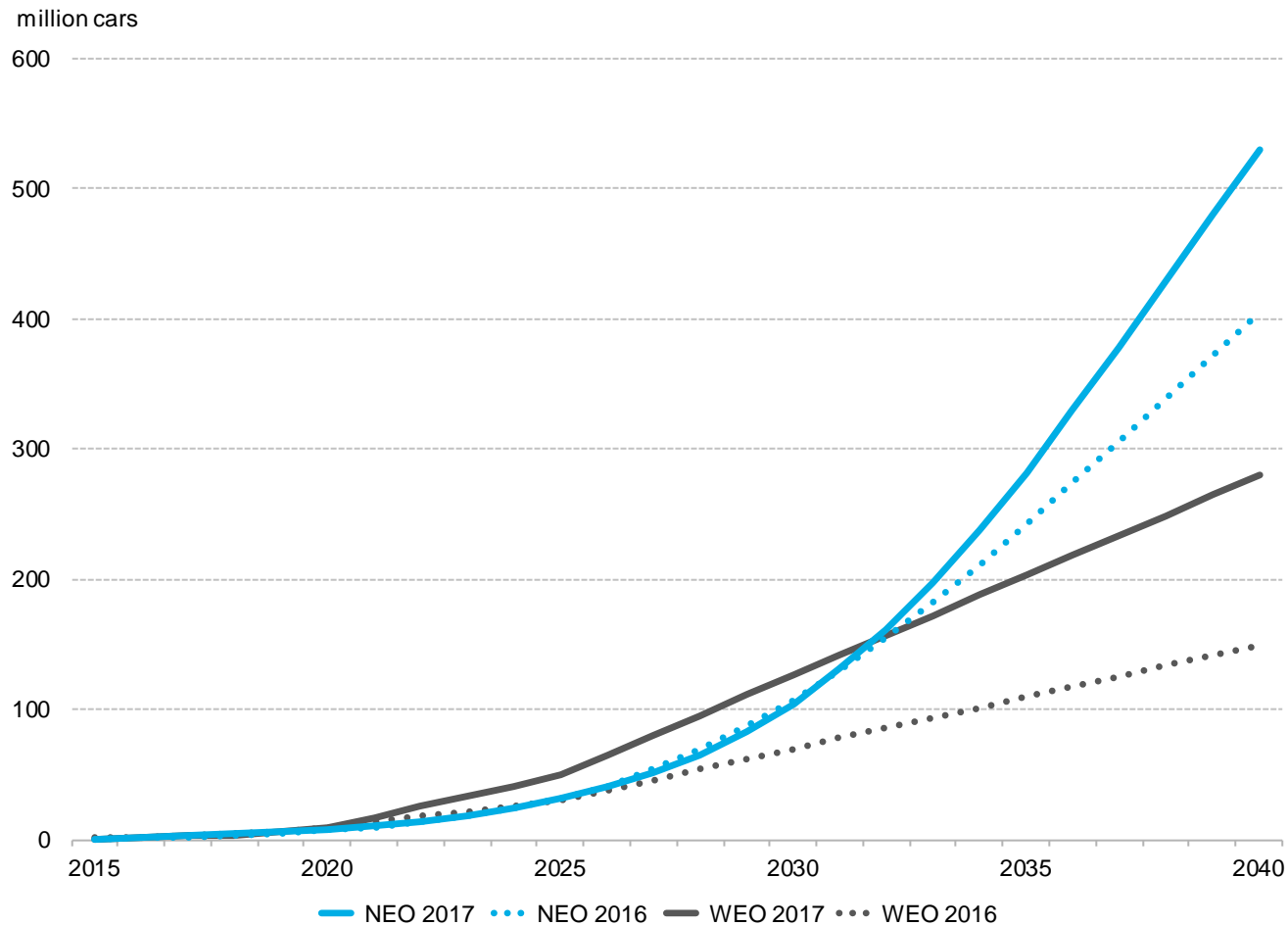
Net capacity additions per year



Source: Bloomberg New Energy Finance, IEA; Note: WEO 2002, 2006 & 2008 is Reference scenario; WEO 2010 - 2017 is **New Policies scenario**; solar includes utility-scale, small-scale PV and solar thermal.

IEAとの比較 電気自動車導入数

Global electric vehicle fleet – light-duty vehicles



Source: Bloomberg New Energy Finance, IEA; Note: IEA figures interpolated based on growth rates and stock in certain years cited in the report.

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sales.bnef@bloomberg.net

about.bnef.com

@BloombergNEF

Miho Kurosaki

mkurosaki3@bloomberg.net

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