SCALING UP FINANCING TO EXPAND THE RENEWABLES PORTFOLIO

IEA RENEWABLE ENERGY WORKING PARTY
PARIS, 9 APRIL 2013

Michael Liebreich, Chief Executive

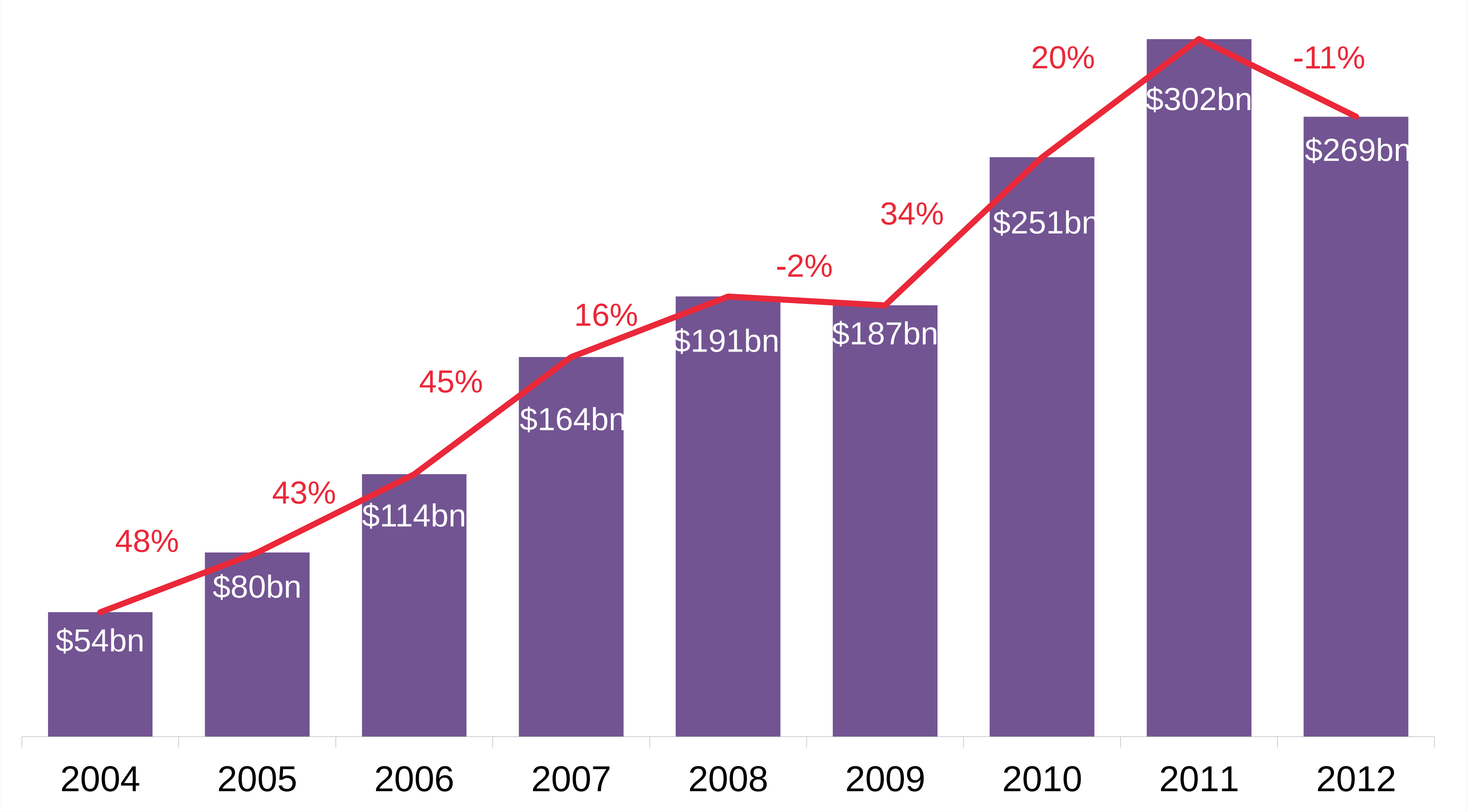
Bloomberg New Energy Finance

Twitter: @MLiebreich

Bloomberg NEW ENERGY FINANCE

GLOBAL TOTAL NEW INVESTMENT IN CLEAN ENERGY

2004–12 ($BN)

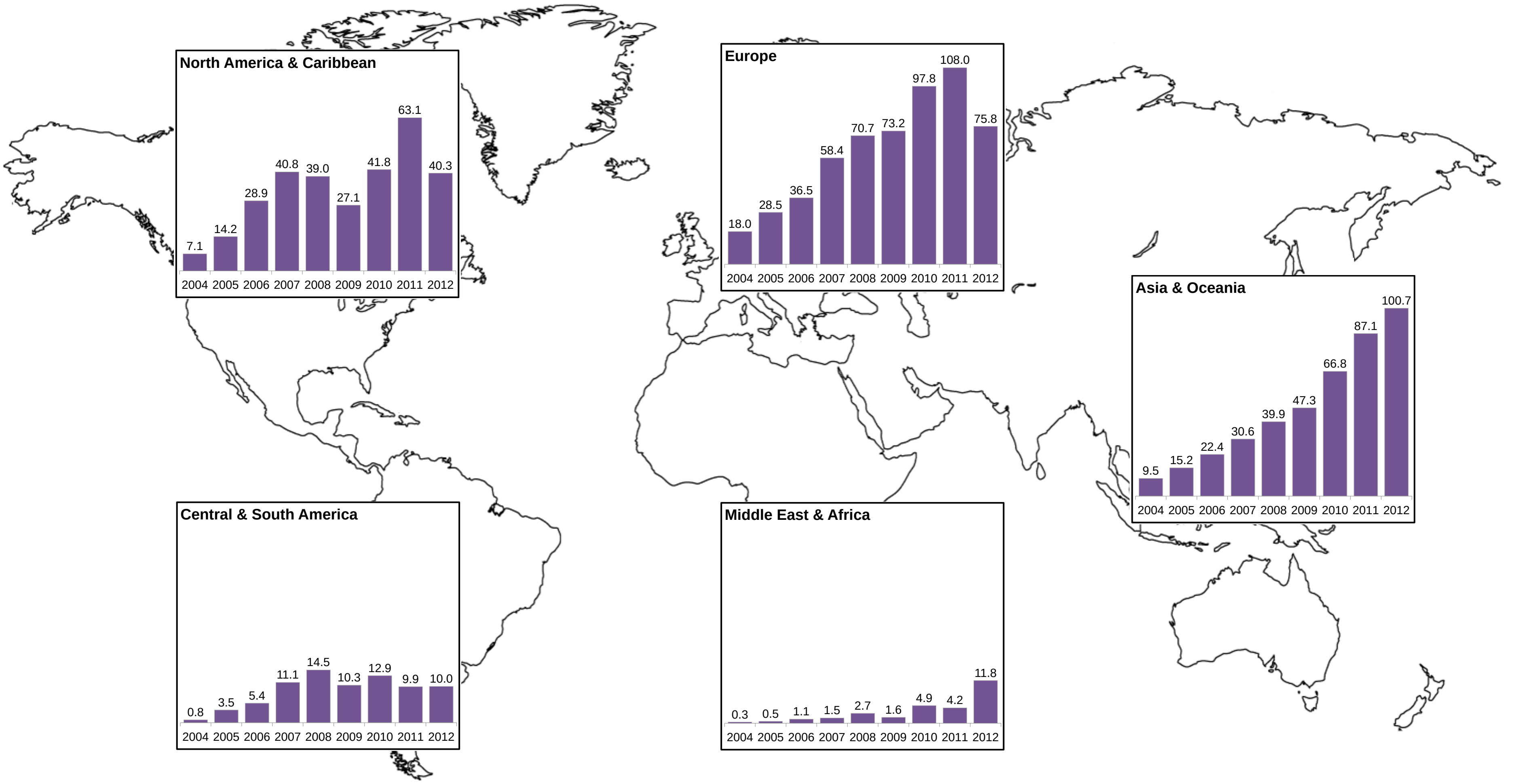


Note: Includes corporate and government R&D, and small distributed capacity. Adjusted for re-invested equity. Does not include proceeds from acquisition transactions

Source: Bloomberg New Energy Finance

NEW INVESTMENT IN CLEAN ENERGY BY REGION

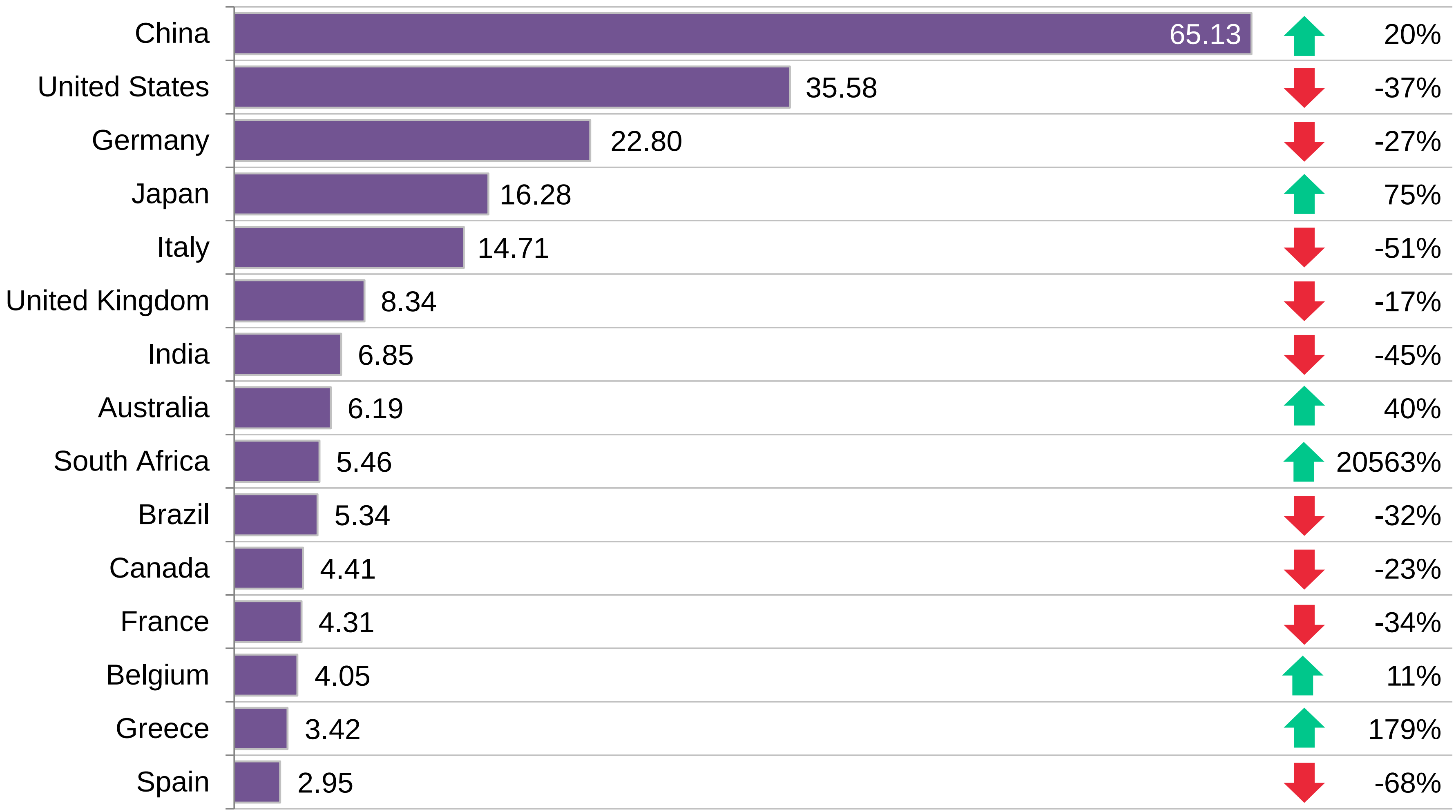
2004–12 ($BN)



Note: Excludes corporate and government R&D

Source: Bloomberg New Energy Finance

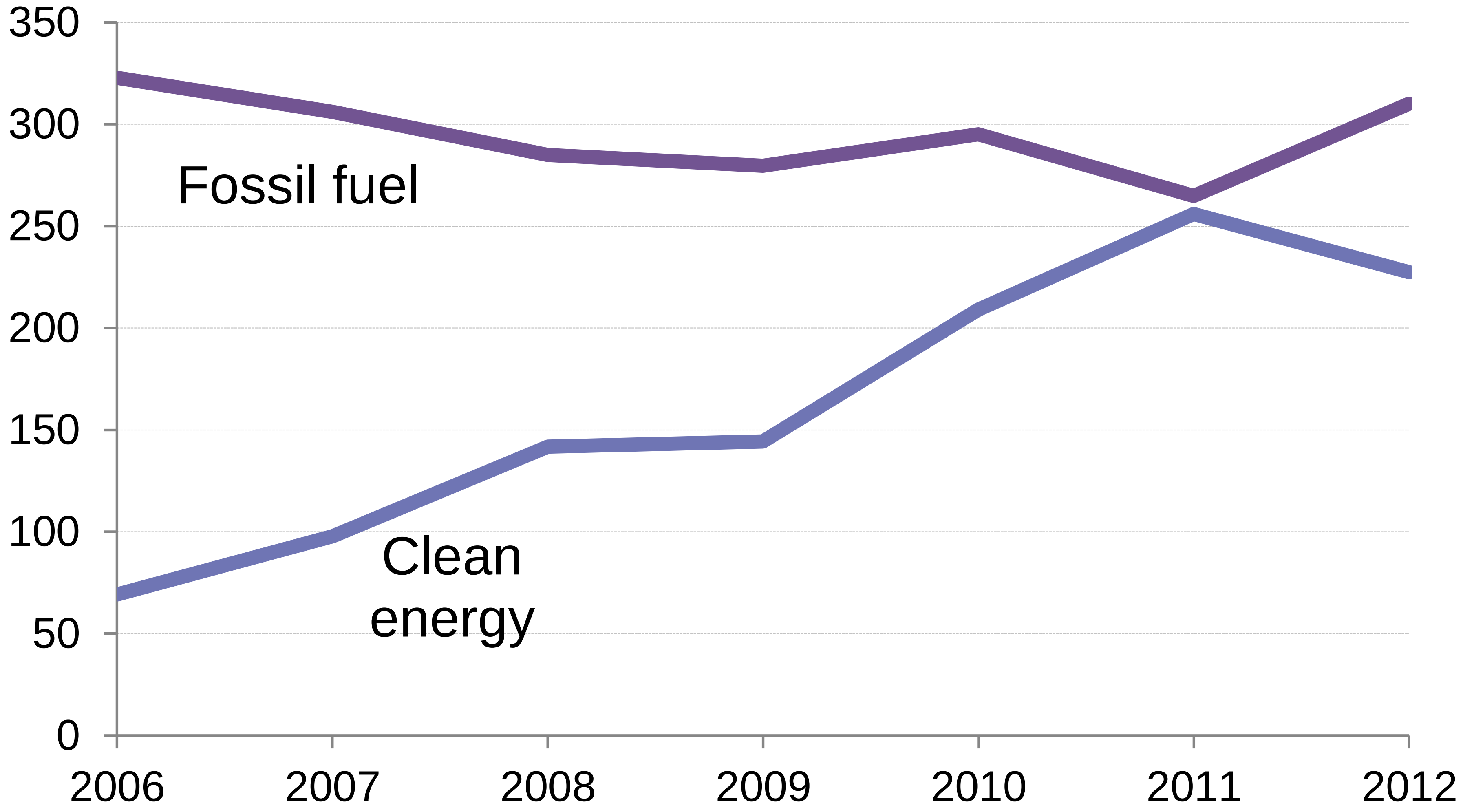
TOP 15 COUNTRIES FOR NEW INVESTMENT IN CLEAN ENERGY IN 2012 AND % CHANGE ON 2011 ($BN)



Note: Excludes corporate and government R&D

Source: Bloomberg New Energy Finance

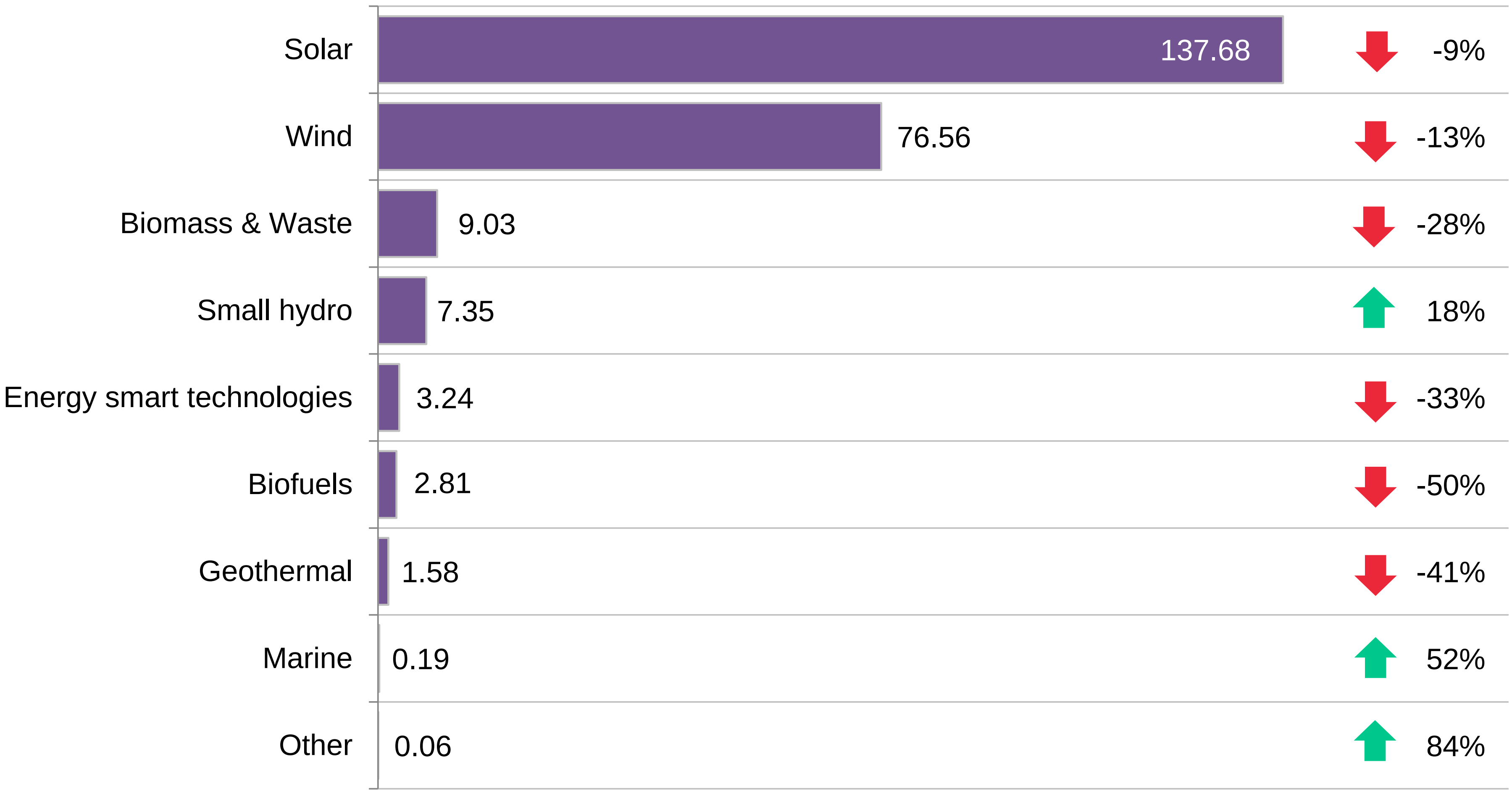
CLEAN VS FOSSIL-BASED GENERATING CAPACITY INVESTMENT, 2006–12 ($BN)



Note: Clean energy total excludes large hydro. Fossil fuel is investment on coal and gas capacity. We assume capacity retirement of 3.3%/yr for coal and 4%/yr for gas.

Source: Bloomberg New Energy Finance, EIA

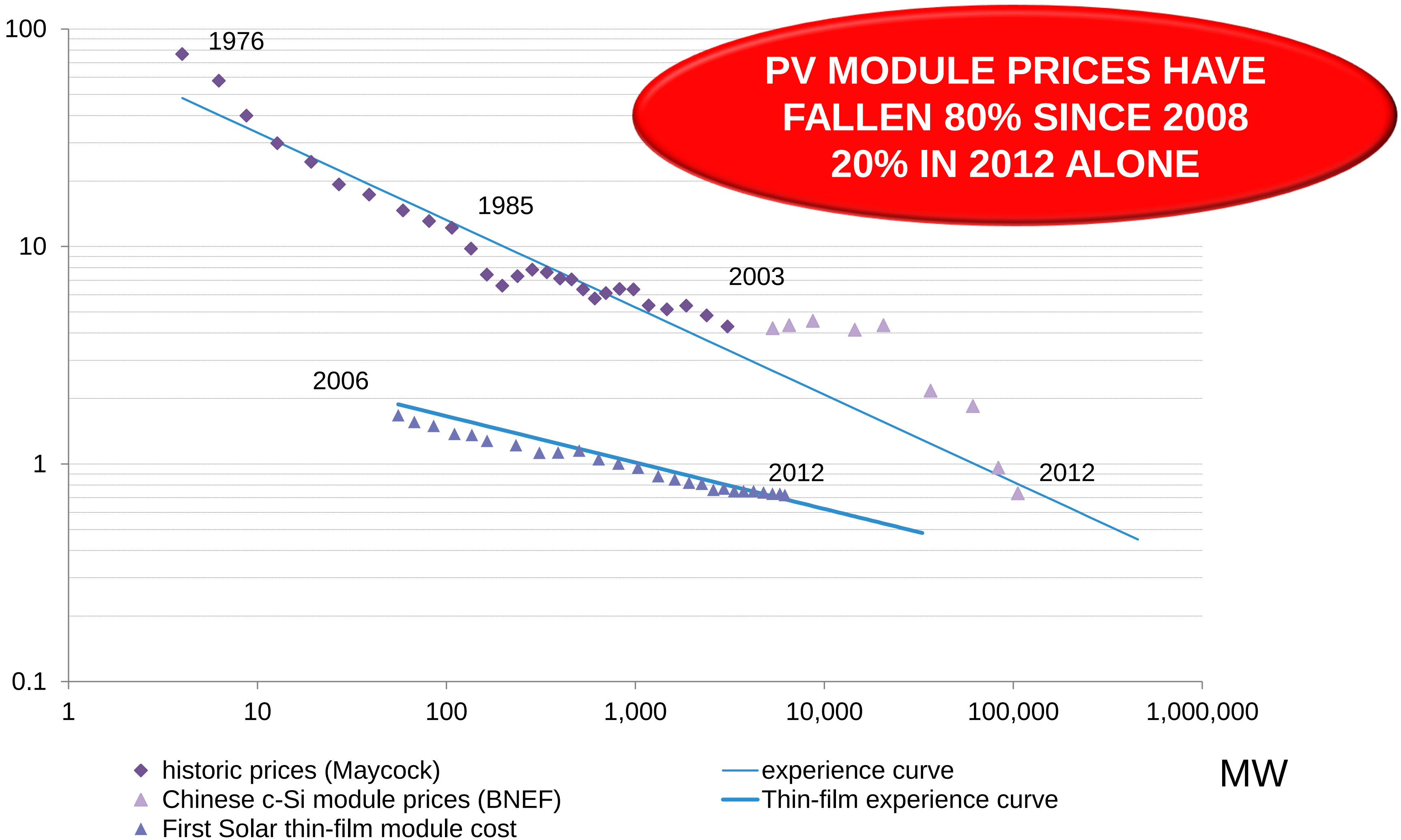
NEW INVESTMENT IN CLEAN ENERGY BY SECTOR IN 2012 AND % CHANGE ON 2011 ($BN)



Note: Excludes corporate and government R&D

Source: Bloomberg New Energy Finance

PV EXPERIENCE CURVE, 1976-2012
2012 $/W

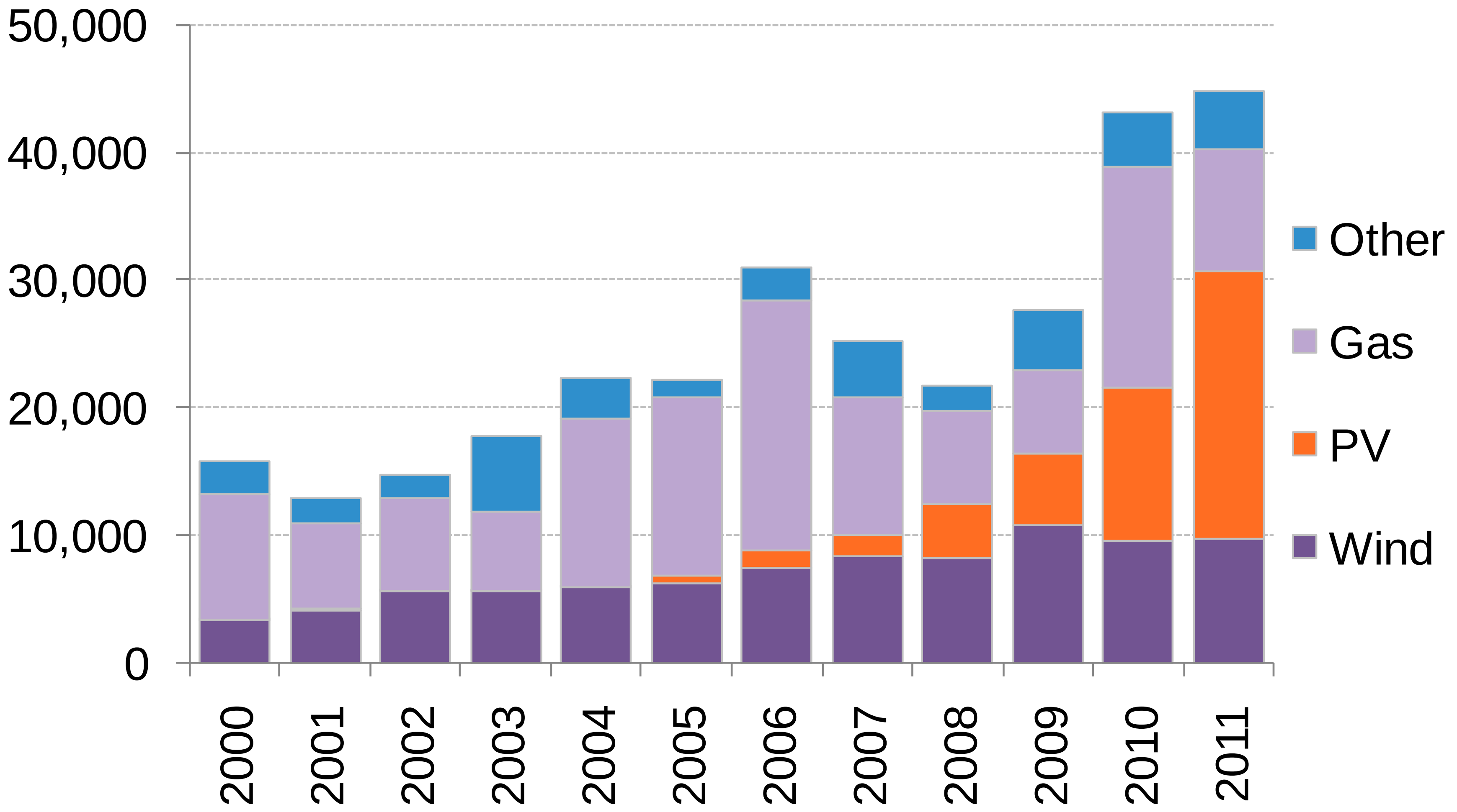


Note: Prices inflation indexed to US PPI.

Source: Paul Maycock, Bloomberg New Energy Finance

EU NET CAPACITY ADDITIONS

(GW)



Source: EWEA, Bloomberg New Energy Finance,

CLEAN ENERGY COST COMPETITIVENESS – AFRICA

Kerosene
$4 per week

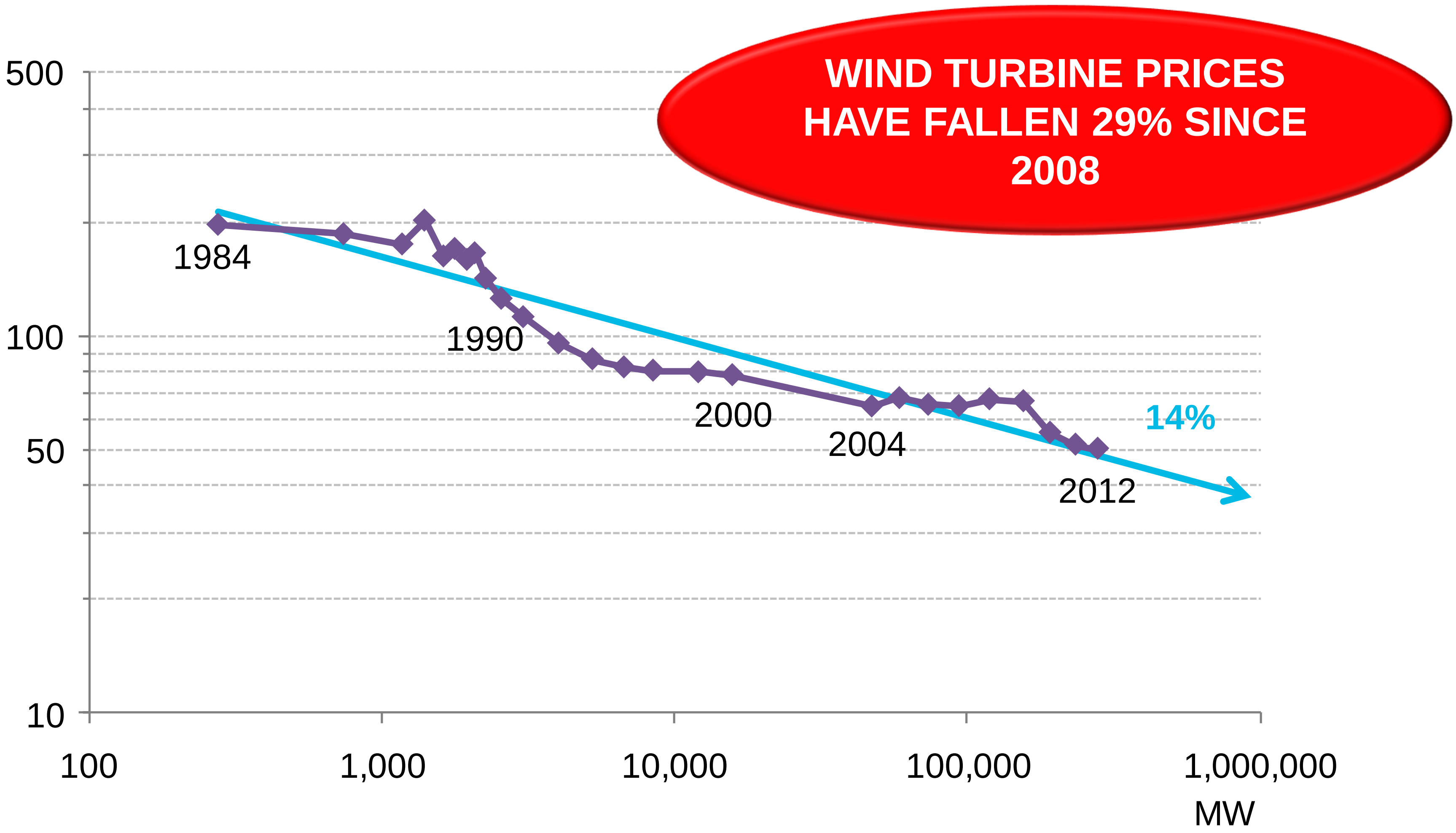
Solar PV
$1 per week

SUSTAINABLE
ENERGY FOR ALL

Note: Illustrative figures for cost of 2 lamps plus mobile phone charging, Kenya, 2012

Picture Credit: SolarSister

AVERAGE LEVELISED COST OF ONSHORE WIND, 1984-2012 (€/MWH)

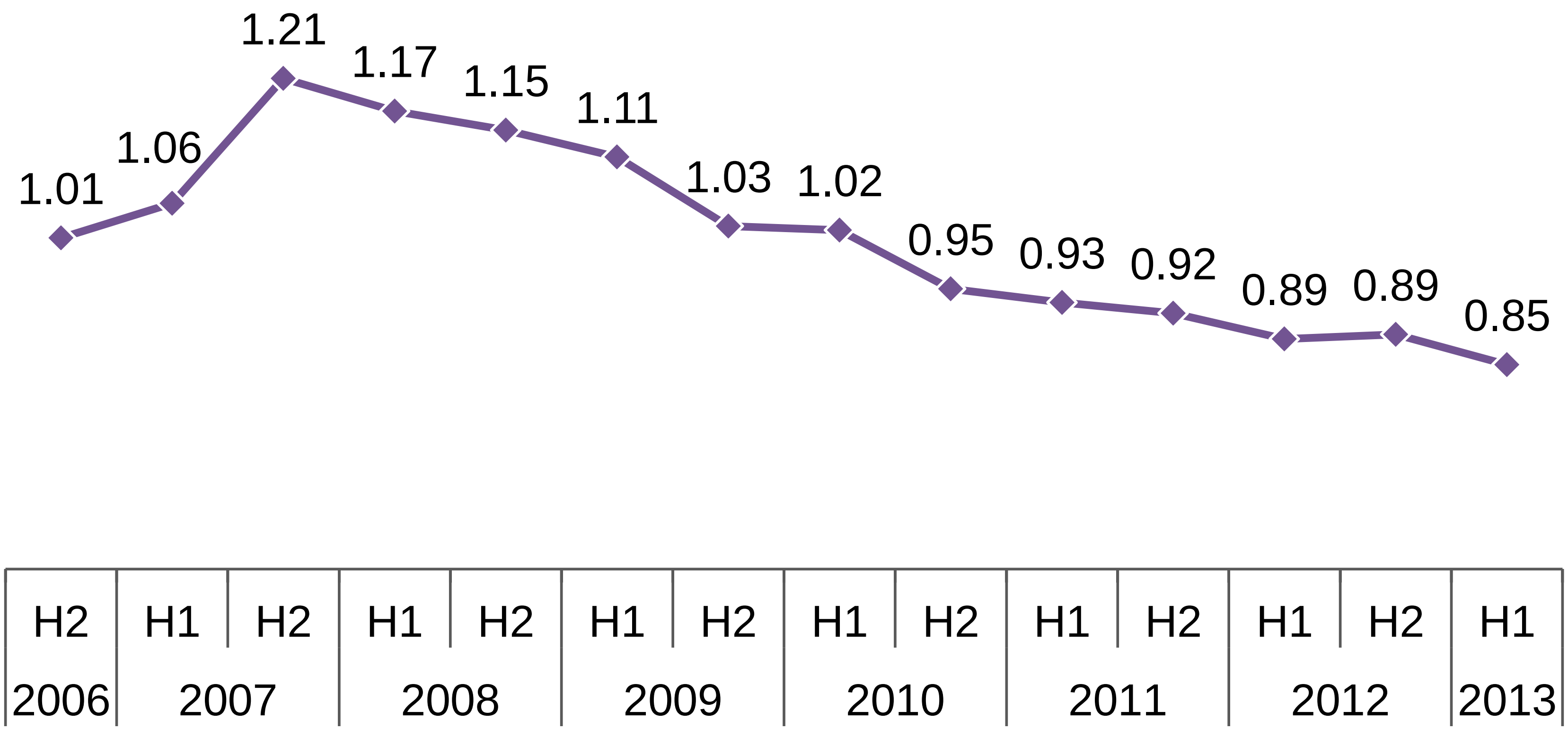


Note: Learning curve (blue line) is least square regression: R^2 = 0.88 and 14% learning rate.

Source: Bloomberg New Energy Finance, ExTool

WTPI VALUES BY CONTRACT SIGNING DATE

H2 2006 – H1 2013 (€M/MW)

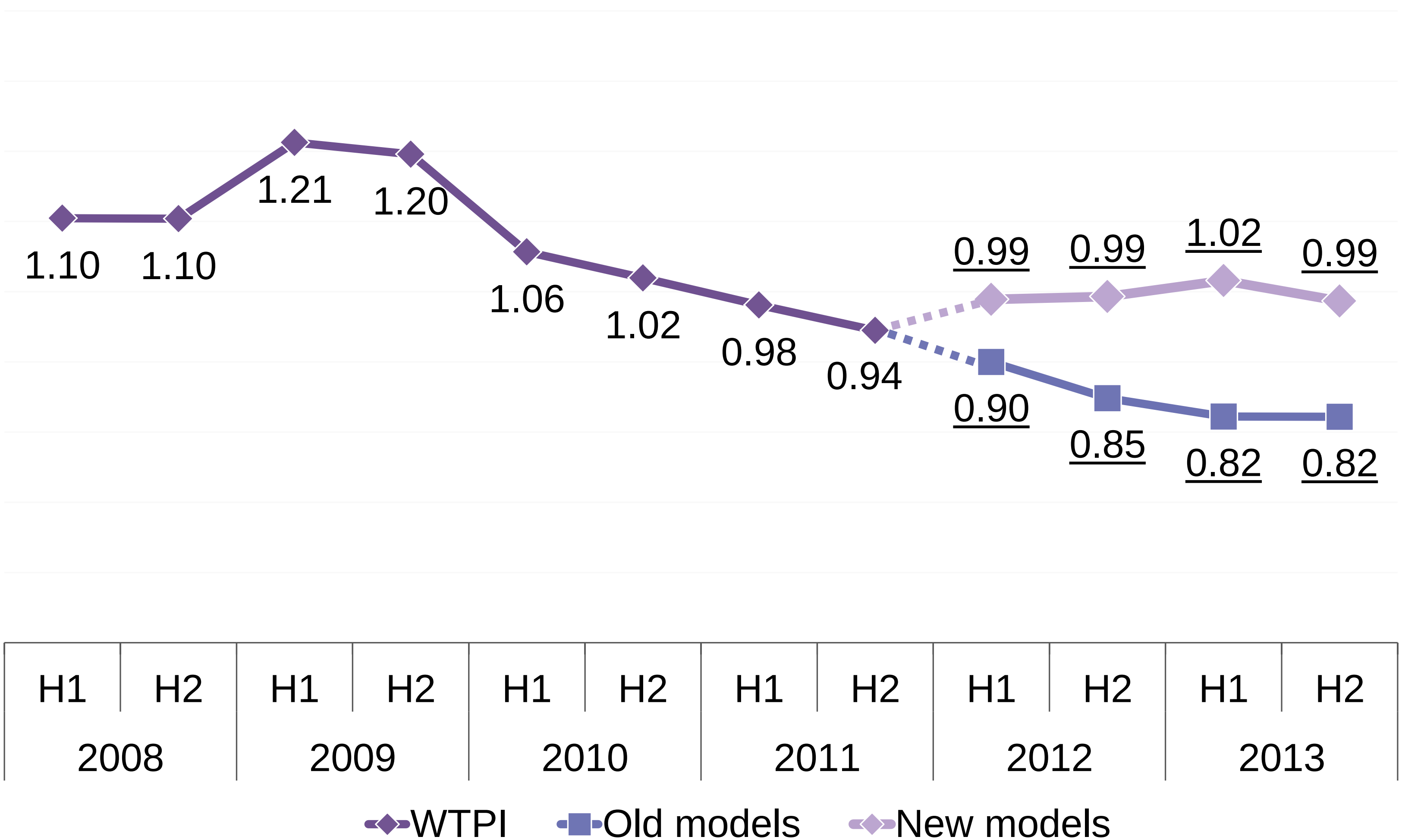


Note: Contract prices include turbine plus towers and transport to site, and they exclude VAT.
Asian turbine contracts have been excluded from the analysis as they exhibit much lower pricing.

Source: Bloomberg New Energy Finance

WTPI BREAKDOWN BY OLD AND NEW TURBINE MODELS

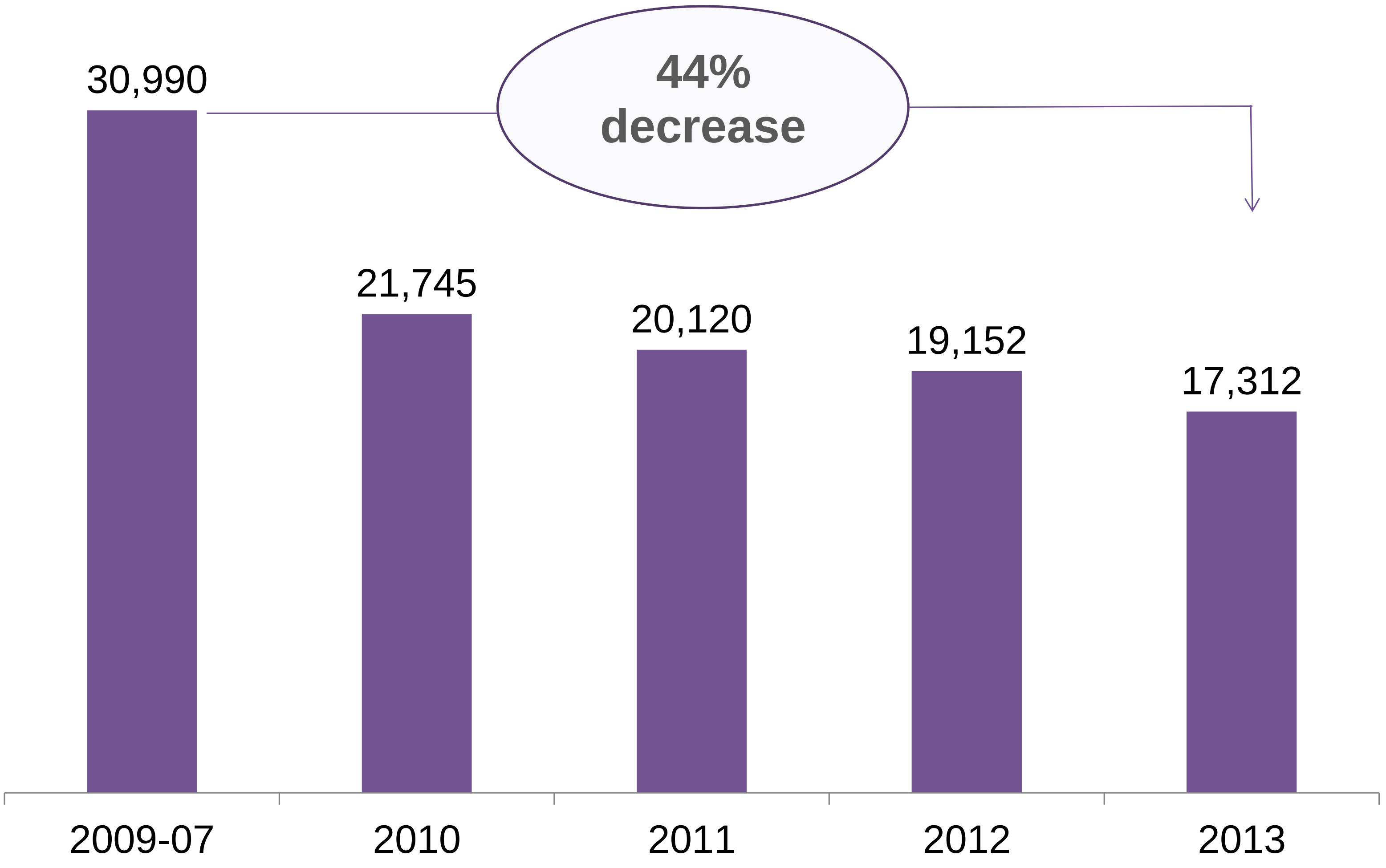
H1 2008 – H2 2013 (€M/MW)



Note: Contract prices include turbine plus towers and transport to site, and they exclude VAT.
Asian turbine contracts have been excluded from the analysis as they exhibit much lower pricing.

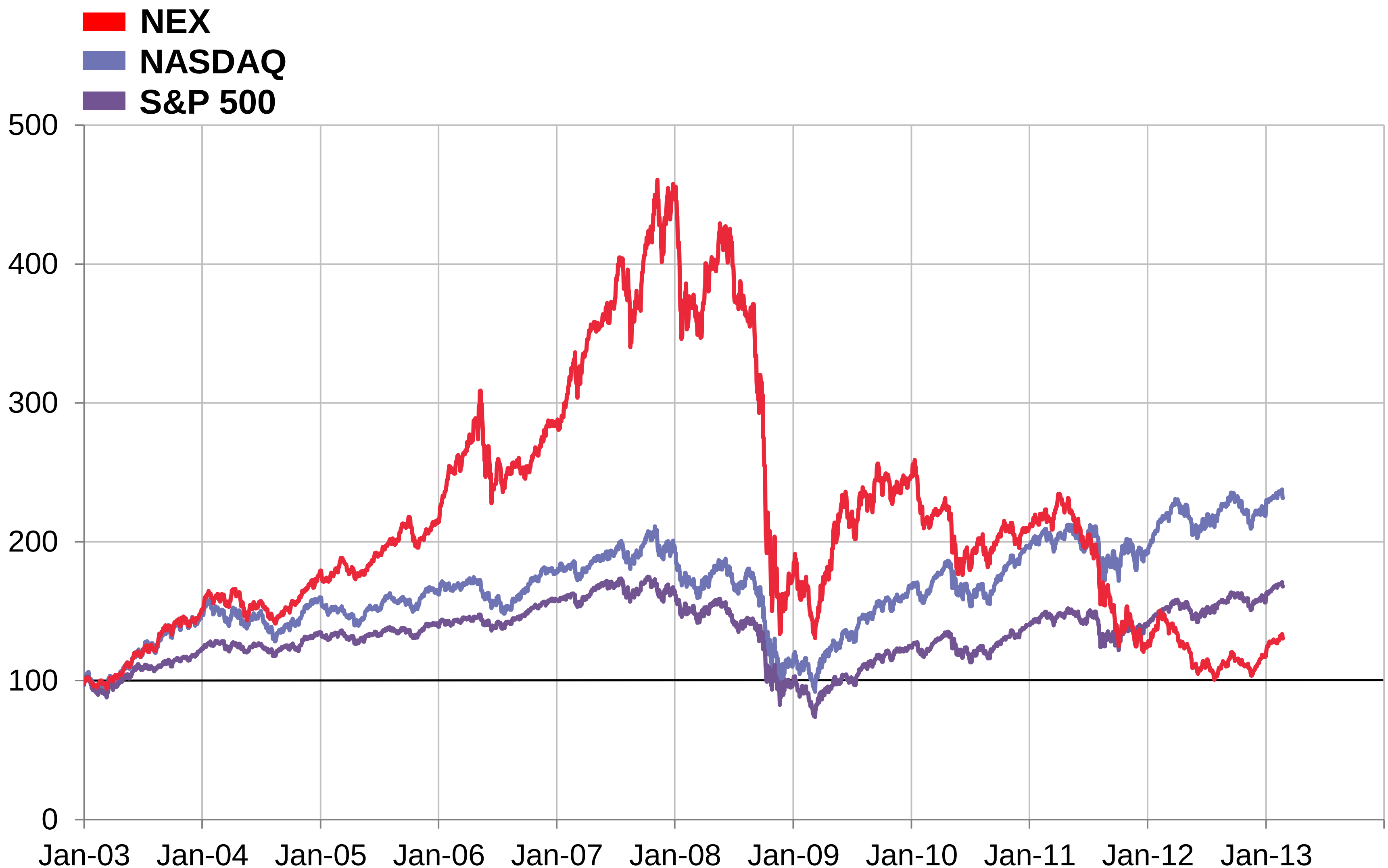
Source: Bloomberg New Energy Finance

AVERAGE PRICE FOR FULL-SERVICE O&M CONTRACTS 2007-13, (EUR/MW PER YEAR)



Source: Bloomberg

NEX CLEAN ENERGY INDEX 2003 – 2013 YTD



Note: Values as of 22 February 2013; NASDAQ and S&P 500 rebased to 100 on 01 Jan 2003

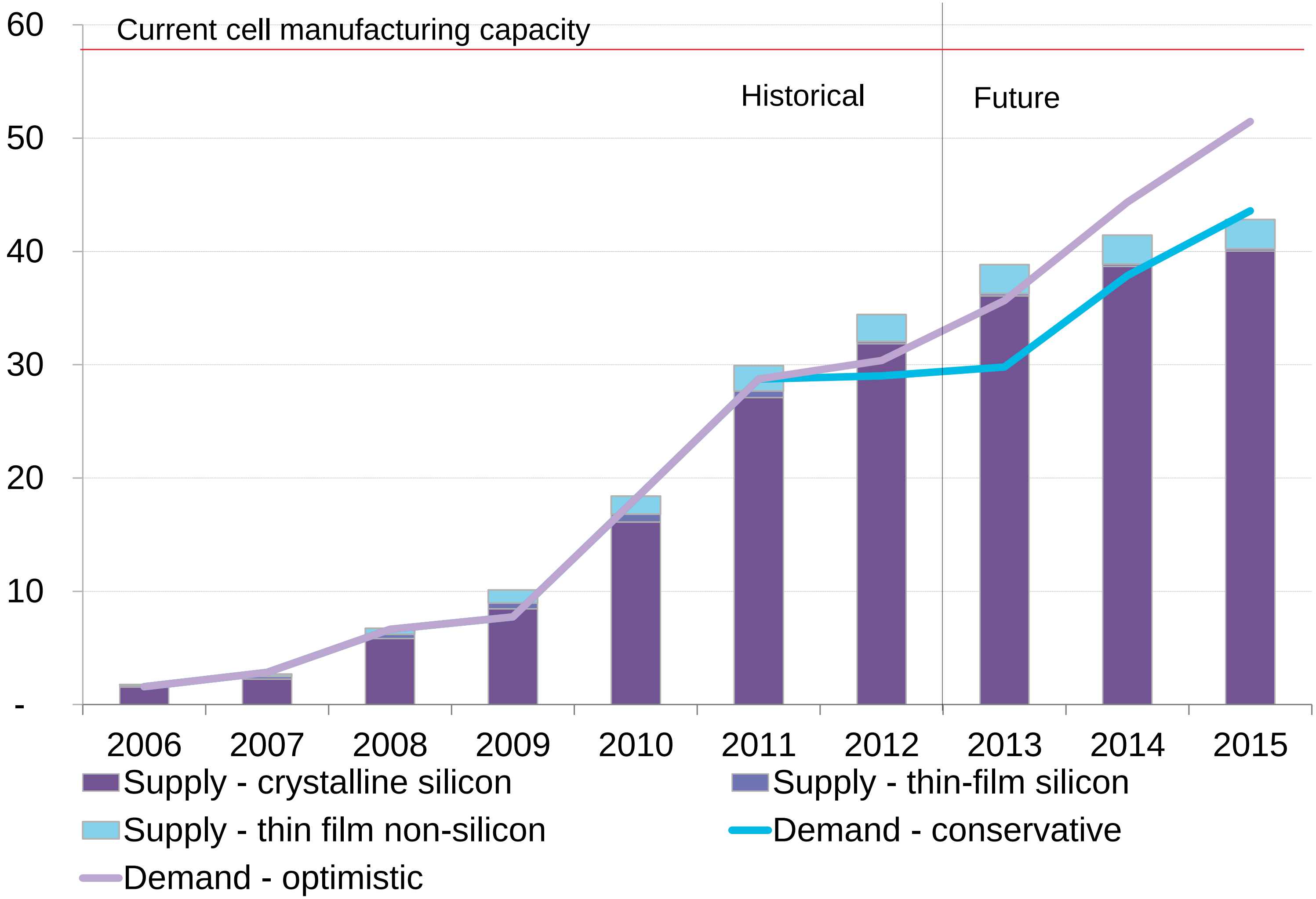
Source: Bloomberg New Energy Finance

NEX CLEAN ENERGY INDEX 2011 – 2013 YTD

Note: Values as of 22 February 2013; NASDAQ and S&P 500 rebased to 100 on 01 Jan 2011.

Source: Bloomberg New Energy Finance

DEMAND VERSUS HISTORICAL AND PROJECTED MODULE PRODUCTION (GW)



Note: Supply scenarios based on continued 2012 utilisation rates.

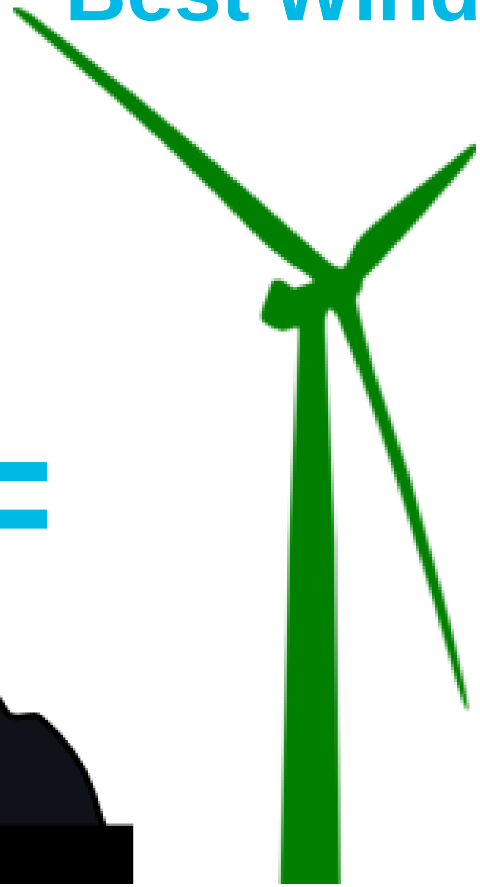
Source: Bloomberg New Energy Finance

GRID-COMPETITIVE CLEAN ENERGY

New coal

=

Best Wind



=

Natural Gas at $6/MMBtu

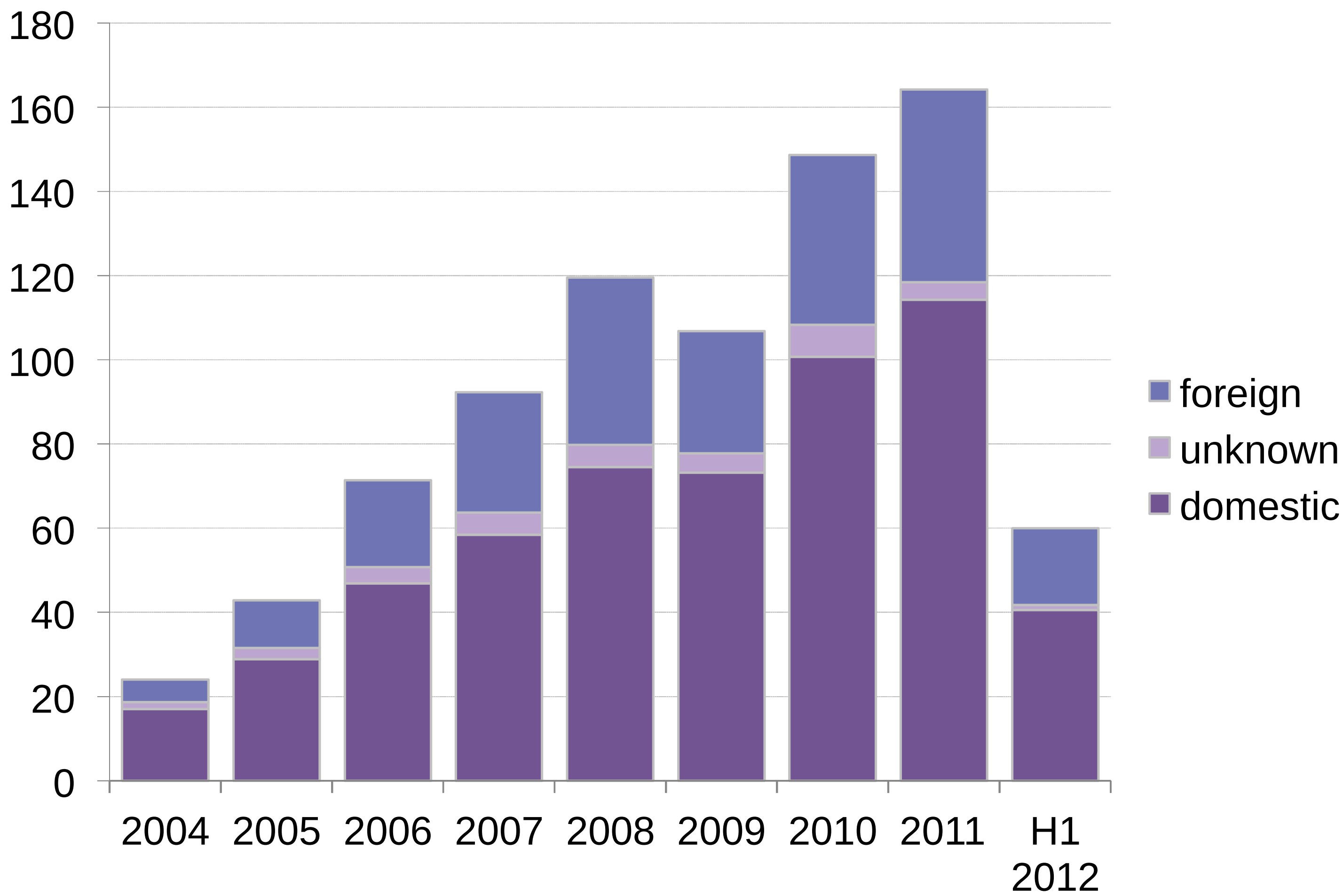
Source: Bloomberg New Energy Finance

$4.06 NATURAL GAS, USA 9 APRIL 2013

Picture credits: Tod Baker via Creative Commons; NASA, NOAA, CERES

ASSET FINANCE INVESTMENT BY ORIGIN OF INVESTOR

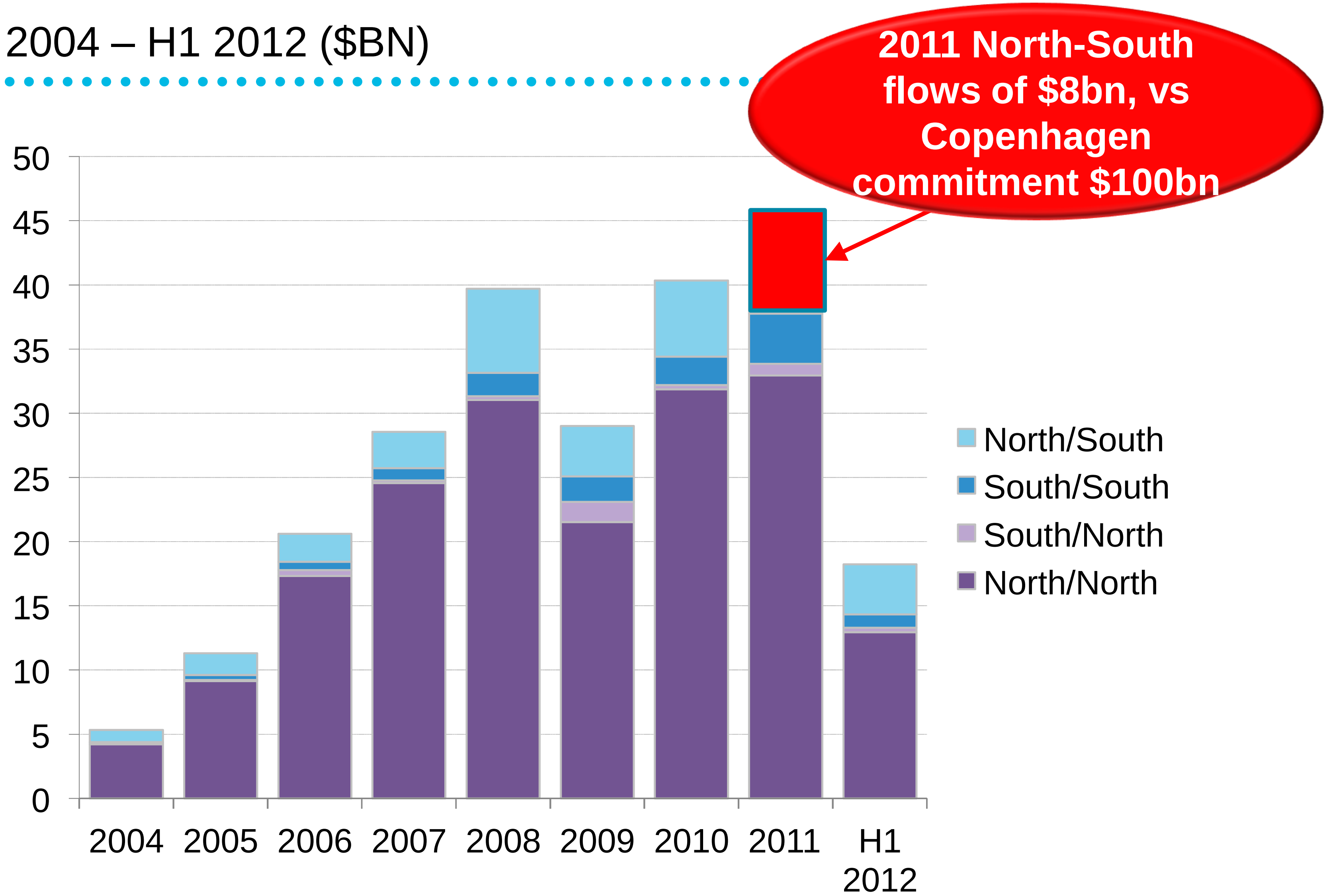
2004 – H1 2012 ($BN)



Note: new build asset finance for renewable energy projects only. Investments are classified as domestic, foreign, or unknown by comparing the country where the project is located to that of the investor's domicile.

Source: Bloomberg New Energy Finance

CROSS-BORDER INVESTMENT VOLUMES BY REGIONAL FLOW, 2004 – H1 2012 ($BN)

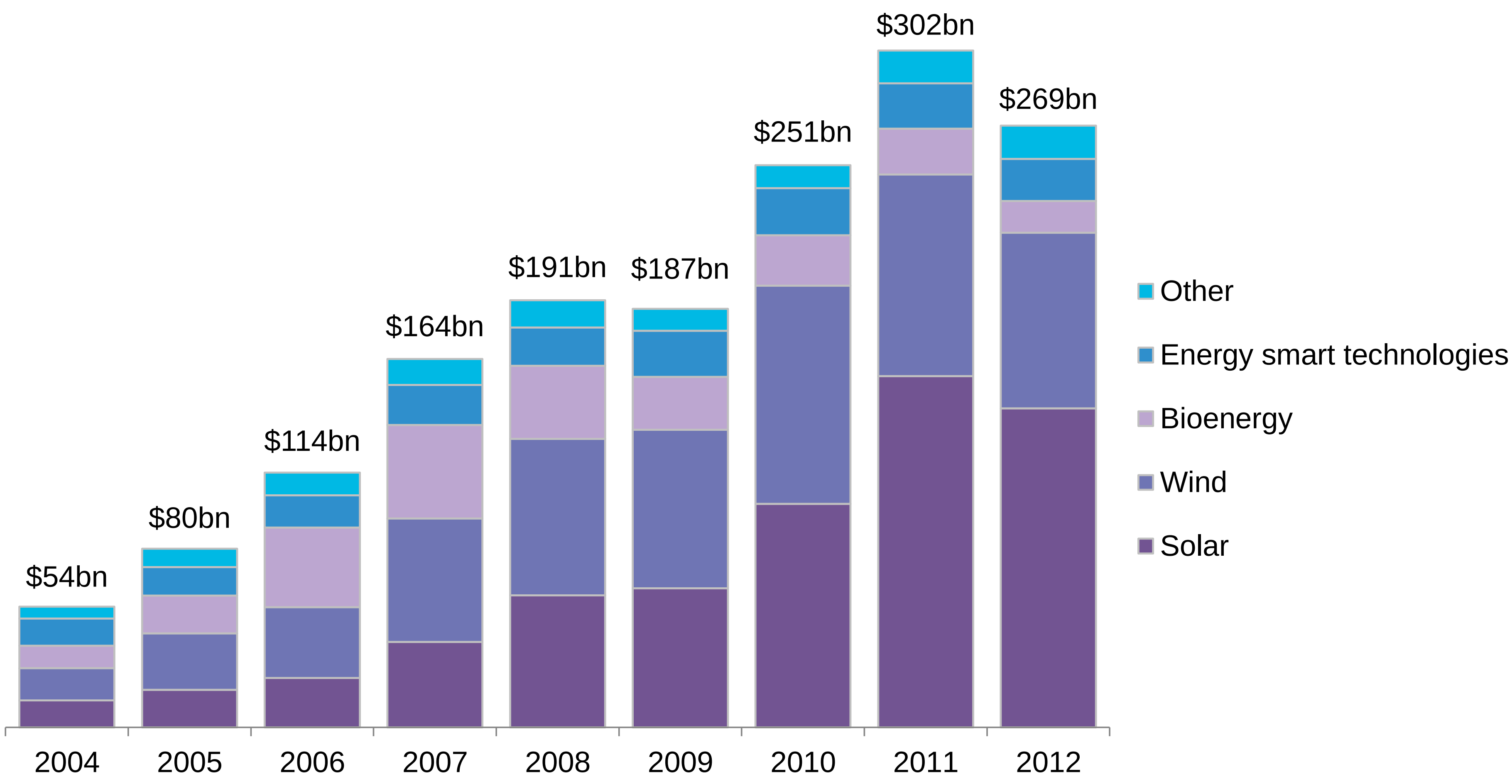


Note: new build asset finance for renewable energy projects only. Investment volumes show cross-border (or foreign) investments only. Domestic investments are excluded here.

Source: Bloomberg New Energy Finance

NEW INVESTMENT IN CLEAN ENERGY BY SECTOR

2004-12 ($BN)

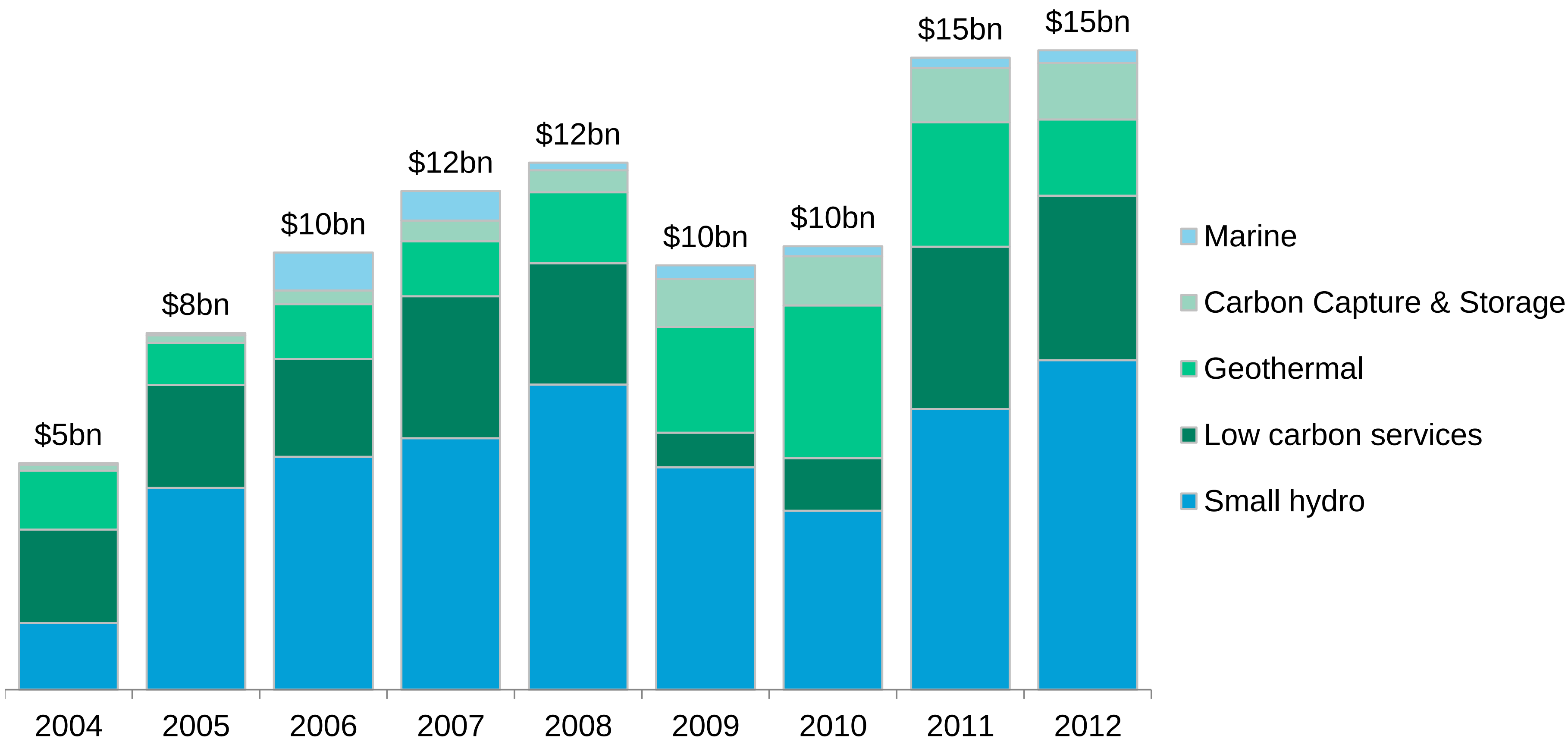


Note: Energy smart technologies excludes investment in projects

Source: Bloomberg New Energy Finance

NEW INVESTMENT IN ‘OTHER’ CLEAN ENERGY SPLIT OUT

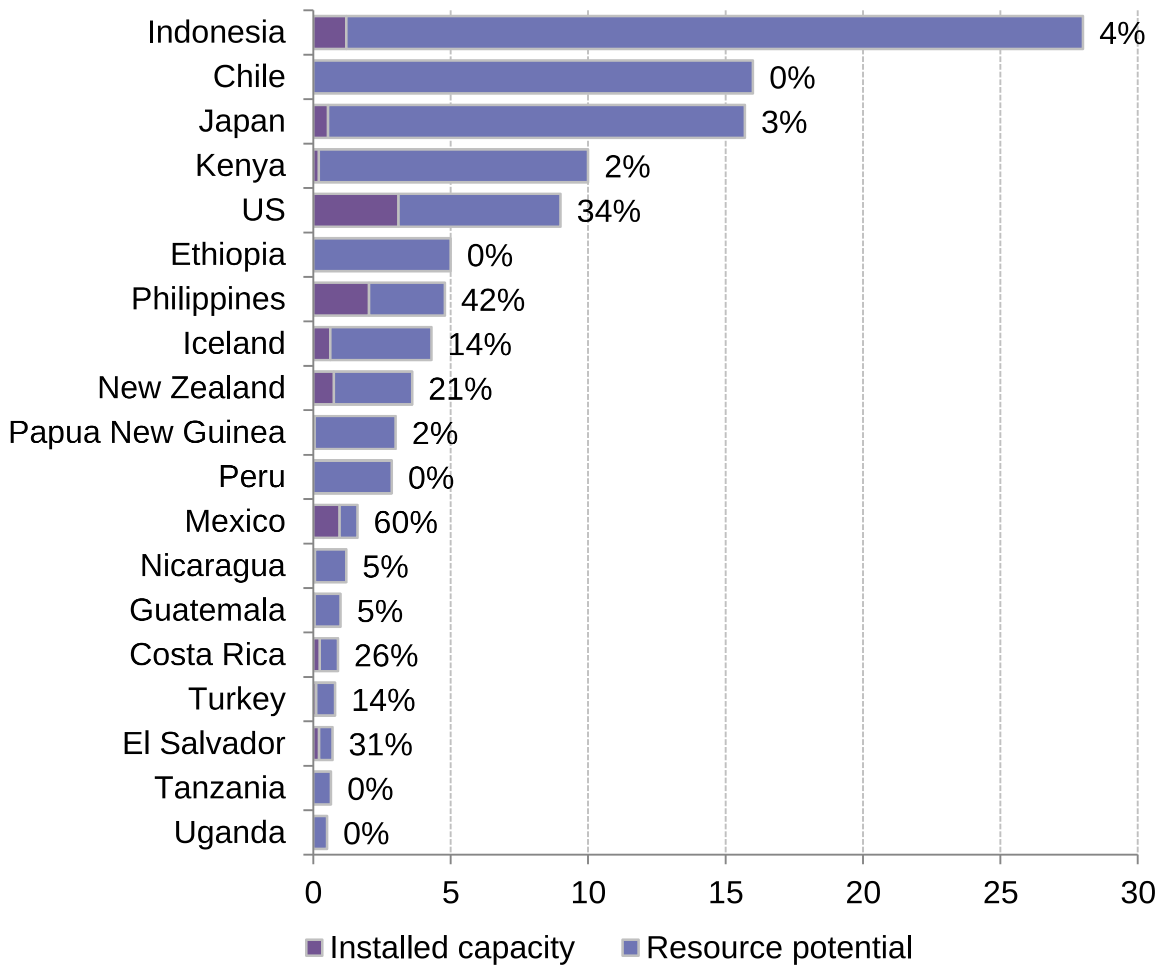
2004-12 ($BN)



Note: Carbon Capture & Storage excludes investment in projects. Small hydro is based on sub-50MW

Source: Bloomberg New Energy Finance

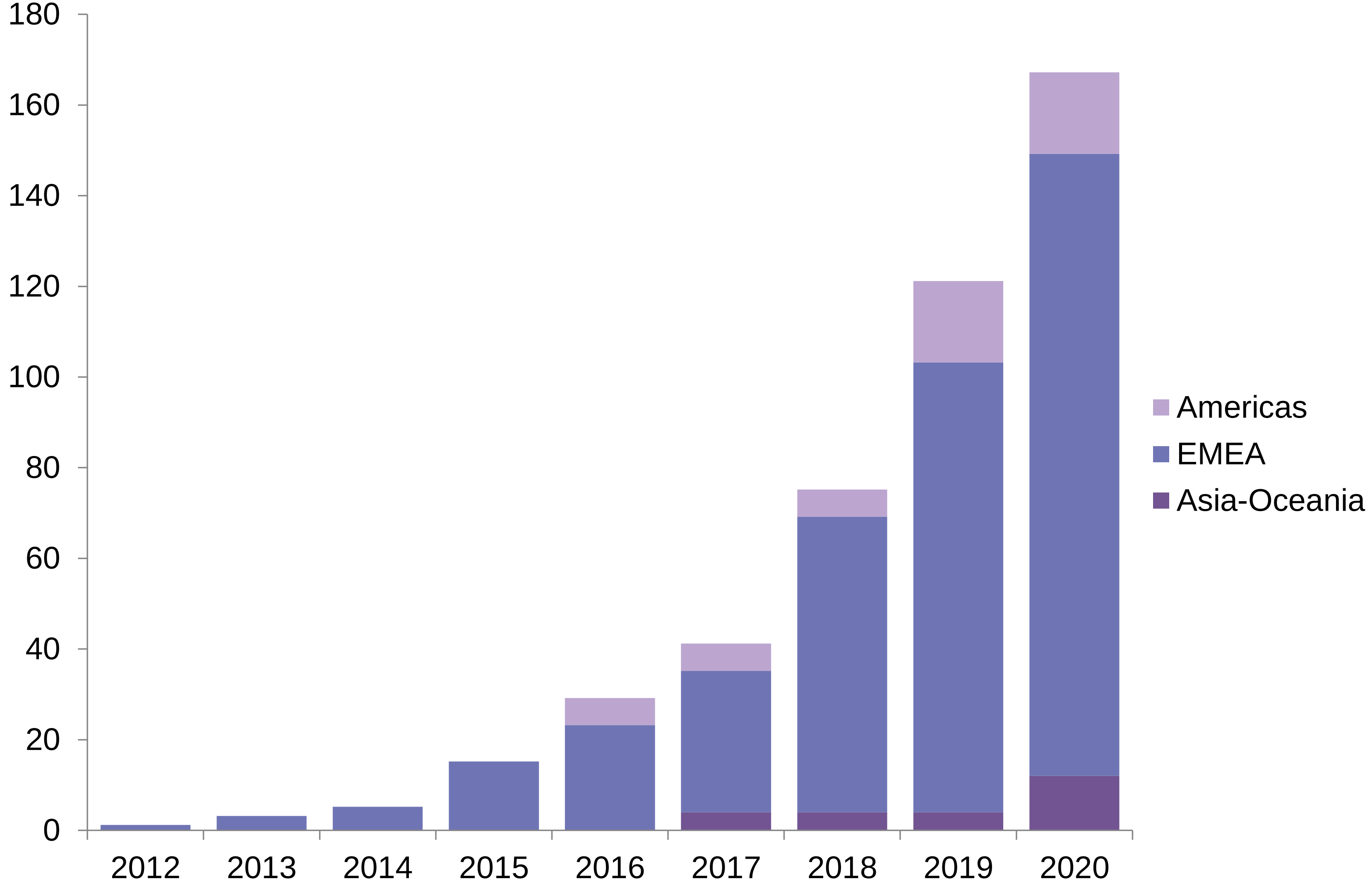
FIGURE 2: POTENTIAL & INSTALLED CAPACITY (GW AND % OF POTENTIAL REALISED)



Note: Bars show GW capacity, the percentage totals show the ratio of installed capacity to resource potential

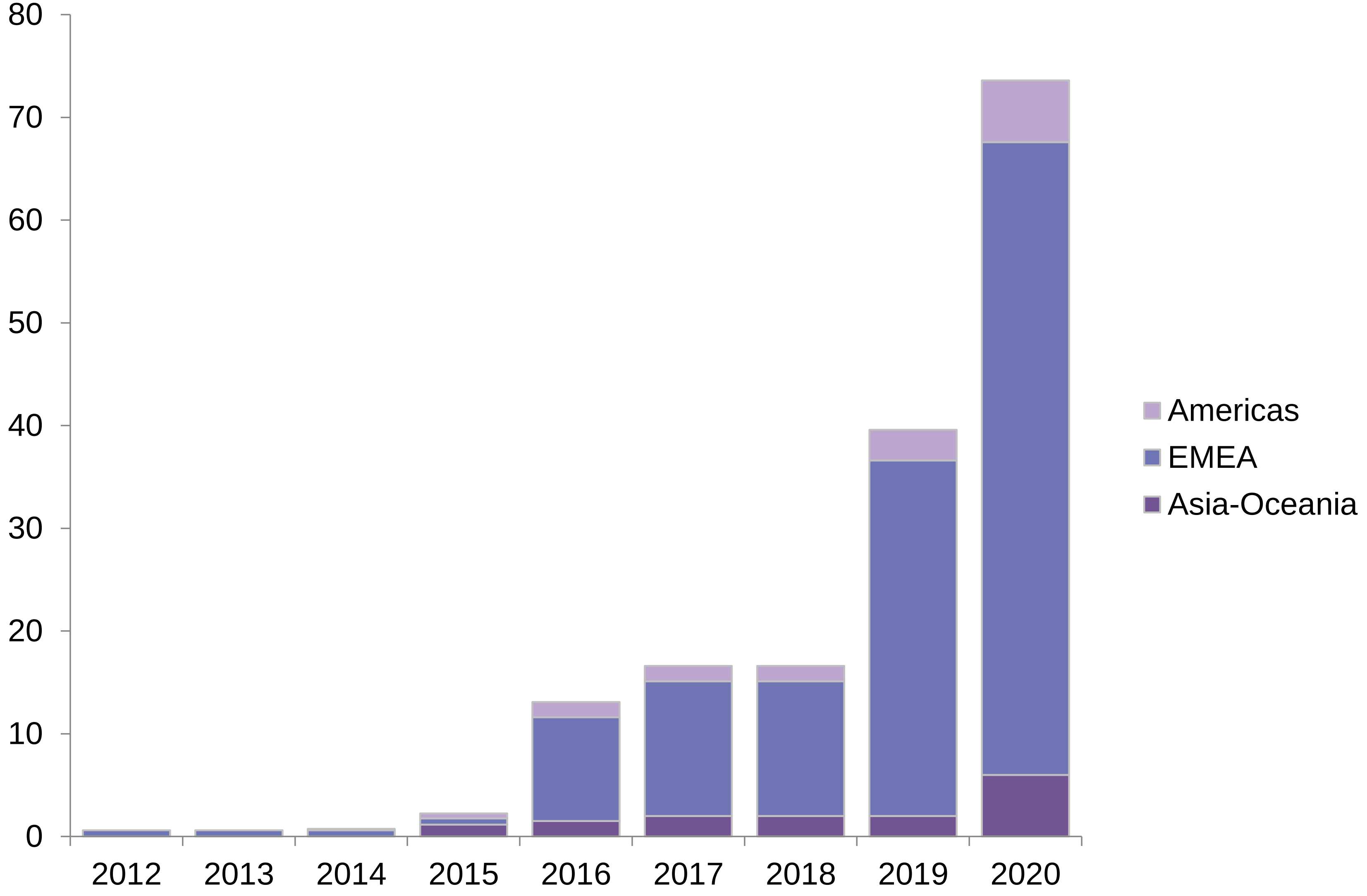
Source: Bloomberg New Energy Finance

ESTIMATED INSTALLED CAPACITY OF TIDAL STREAM DEVICES 2012-20 (MW, CUMULATIVE)



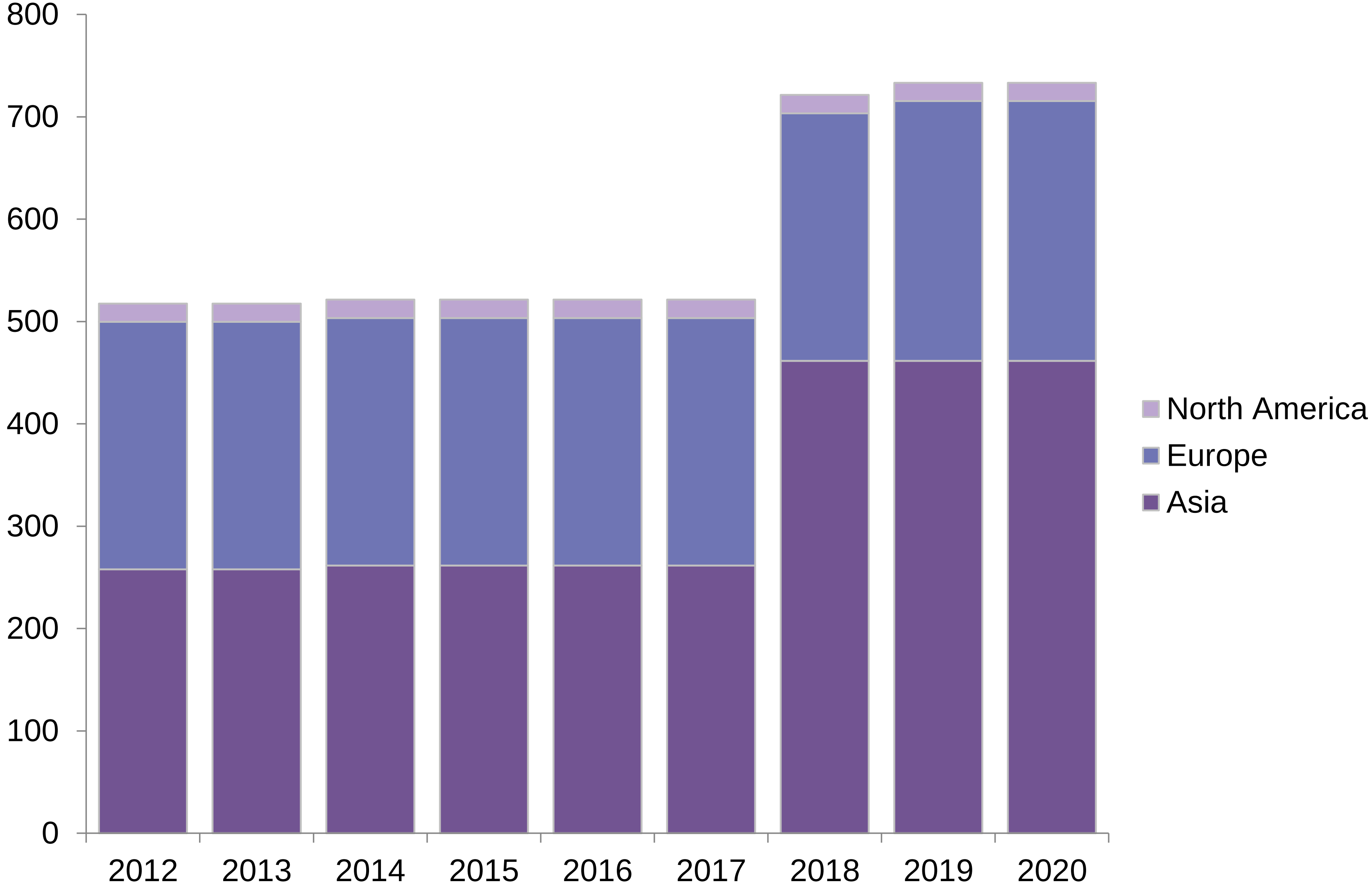
Source: Bloomberg New Energy Finance

ESTIMATED INSTALLED CAPACITY OF WAVE DEVICES 2012-20 (MW, CUMULATIVE)



Source: Bloomberg New Energy Finance

ESTIMATED INSTALLED CAPACITY OF TIDAL BARRAGES 2012-20 (MW, CUMULATIVE)



Source: Bloomberg New Energy Finance

NON-INTERMITTENT CLEAN ENERGY PRACTICE (NICE)

- Increasing volume of research into baseload clean energy solutions
- Sectors:
  - Hydro
  - Geothermal
  - Biomass
  - Tidal
  - CCS
  - Nuclear
- Contact:
  - Mark Taylor, DC (mtaylor87@bloomberg.net)

THANK YOU!

MICHAEL LIEBREICH
TWITTER: @MLiebreich

MARKETS

Renewable Energy
Carbon Markets
Energy Smart Technologies
Renewable Energy Certificates
Carbon Capture & Storage
Power
Water
Nuclear

SERVICES

Insight: research, analysis & forecasting
Industry Intelligence: data & analytics
News & Briefing: daily, weekly & monthly
Applied Research: custom research & data mining
Knowledge Services: Summit, Leadership Forums, Executive Briefings & workshops

Subscription-based news, data and analysis to support your decisions in clean energy, power and water and the carbon markets

sales.bnef@bloomberg.net

Bloomberg
NEW ENERGY FINANCE