

FINANCING OPTIONS – OVERVIEW AND CHOICES AVAILABLE

EUROPEAN PARLIAMENT, BRUSSELS

ANGUS MCCRONE

29 NOVEMBER 2011



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1. Clean energy investment trends

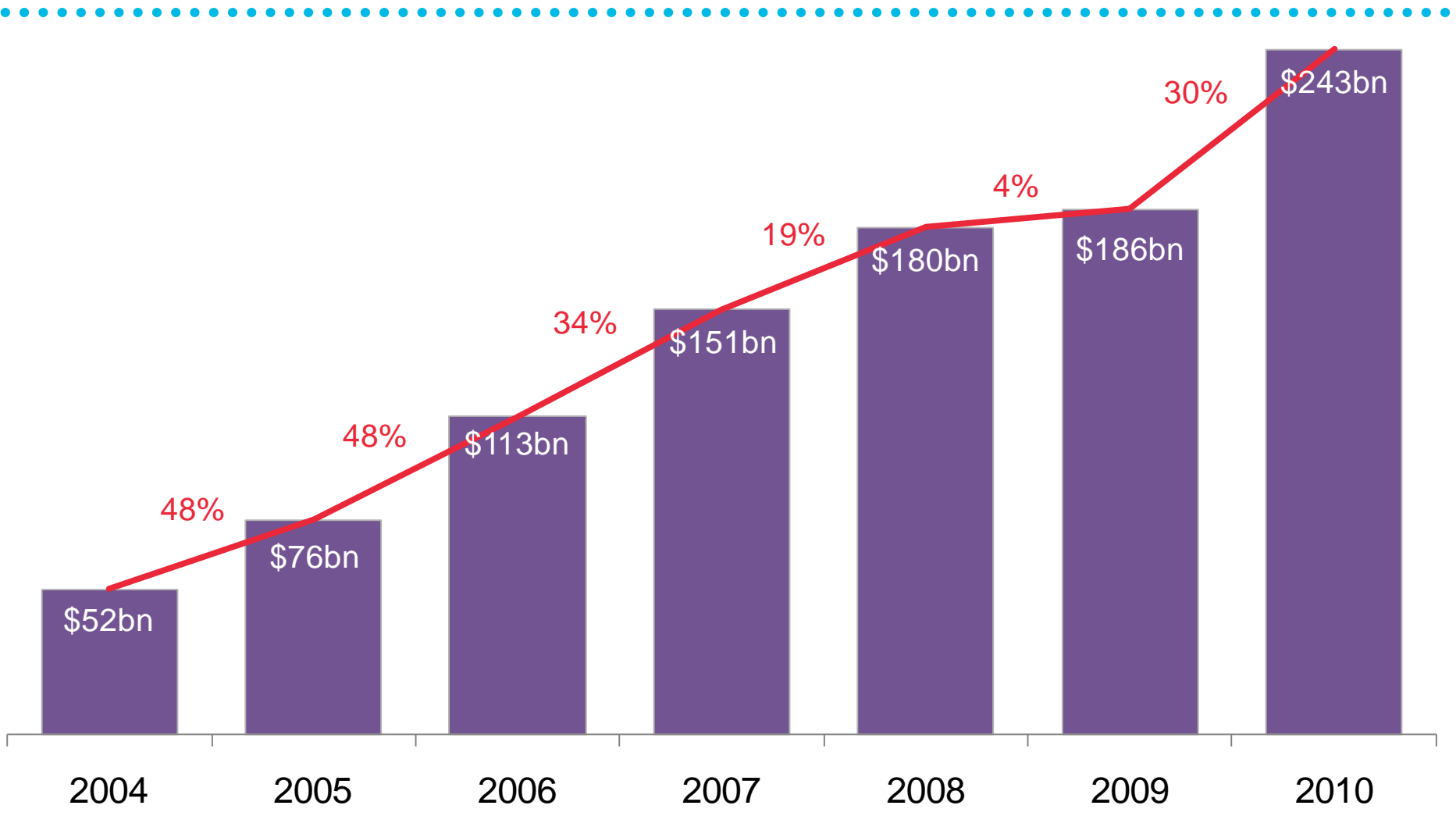
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GLOBAL TOTAL NEW INVESTMENT IN CLEAN ENERGY

2004–10 (\$BN)

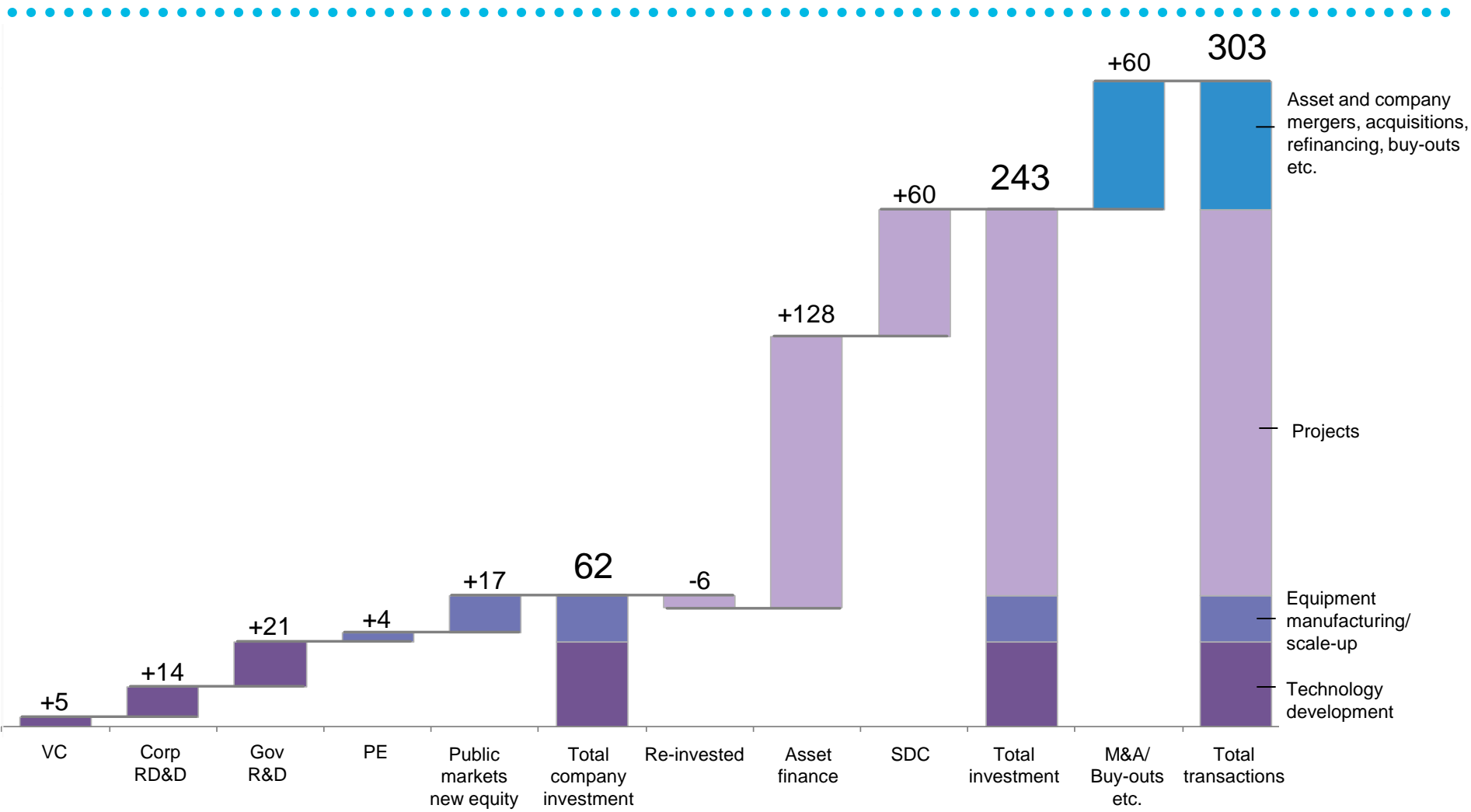


Note: Includes corporate and government R&D, and small distributed capacity. Adjusted for re-invested equity. Does not include proceeds from acquisition transactions

Source: Bloomberg New Energy Finance

GLOBAL CLEAN ENERGY INVESTMENT TYPES AND FLOWS

2010 (\$BN)

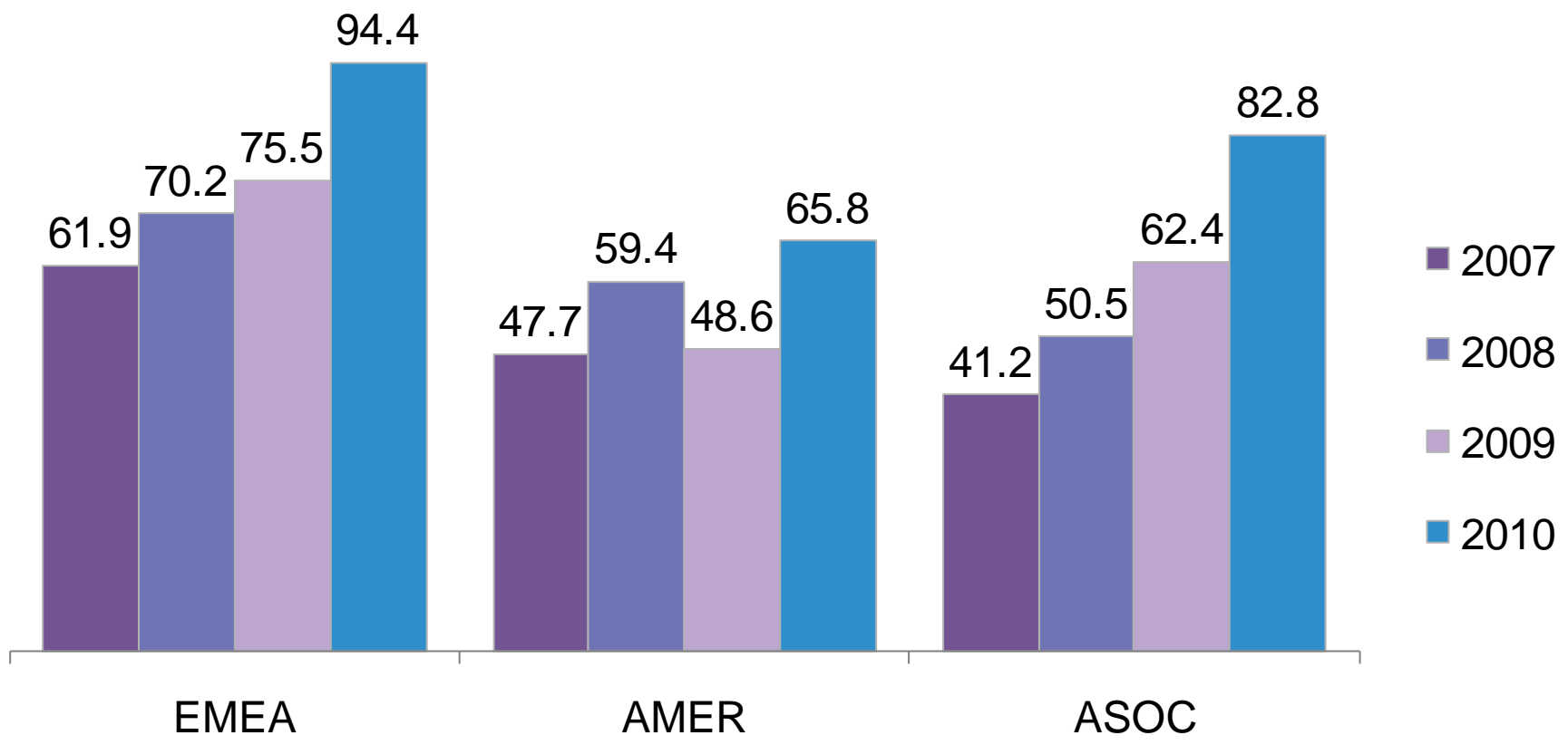


Note: SDC = small distributed capacity. Total values include estimates for undisclosed deals.

Source: Bloomberg New Energy Finance

TOTAL NEW INVESTMENT IN CLEAN ENERGY BY REGION

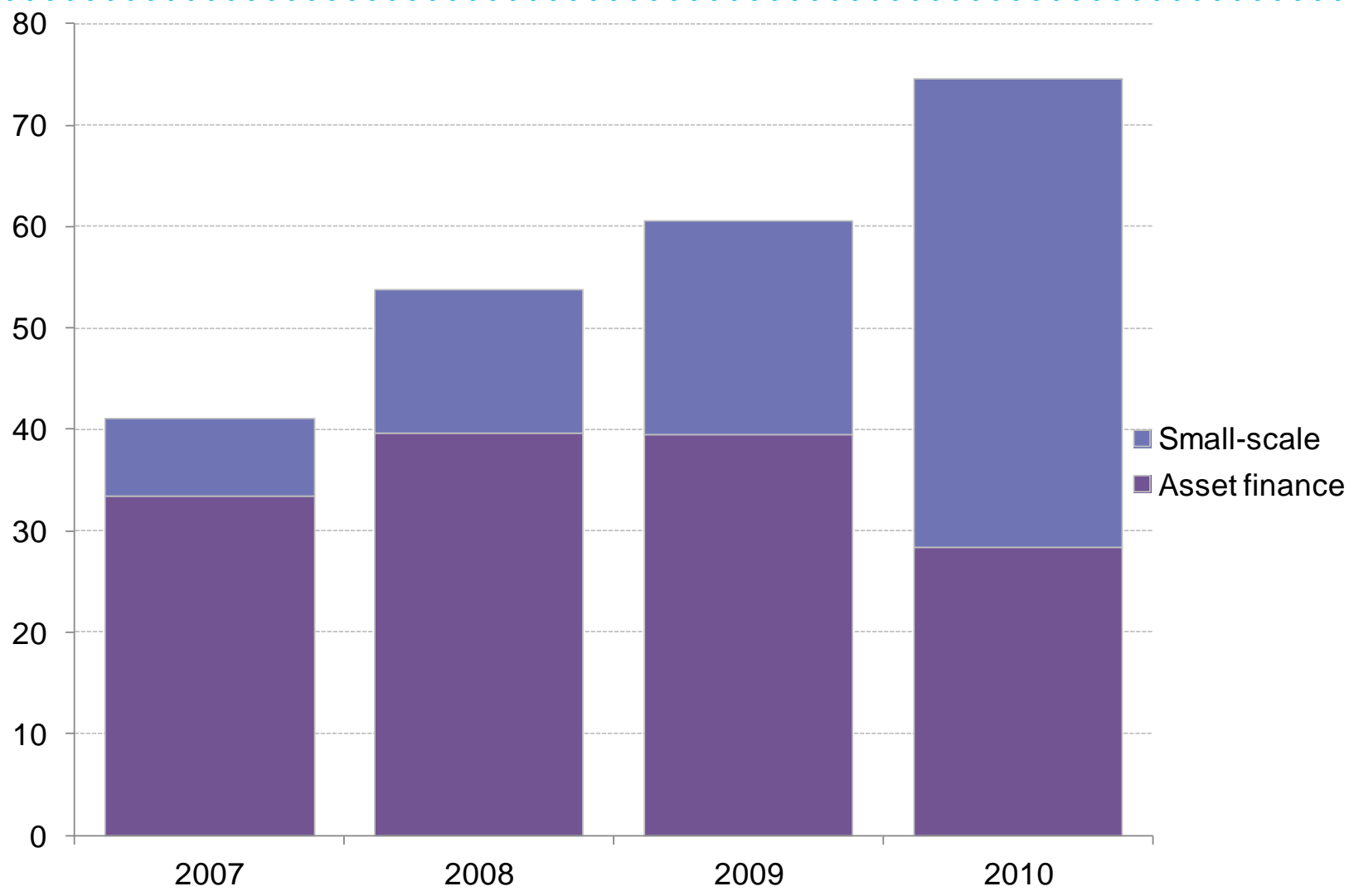
2007–10 (\$BN)



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

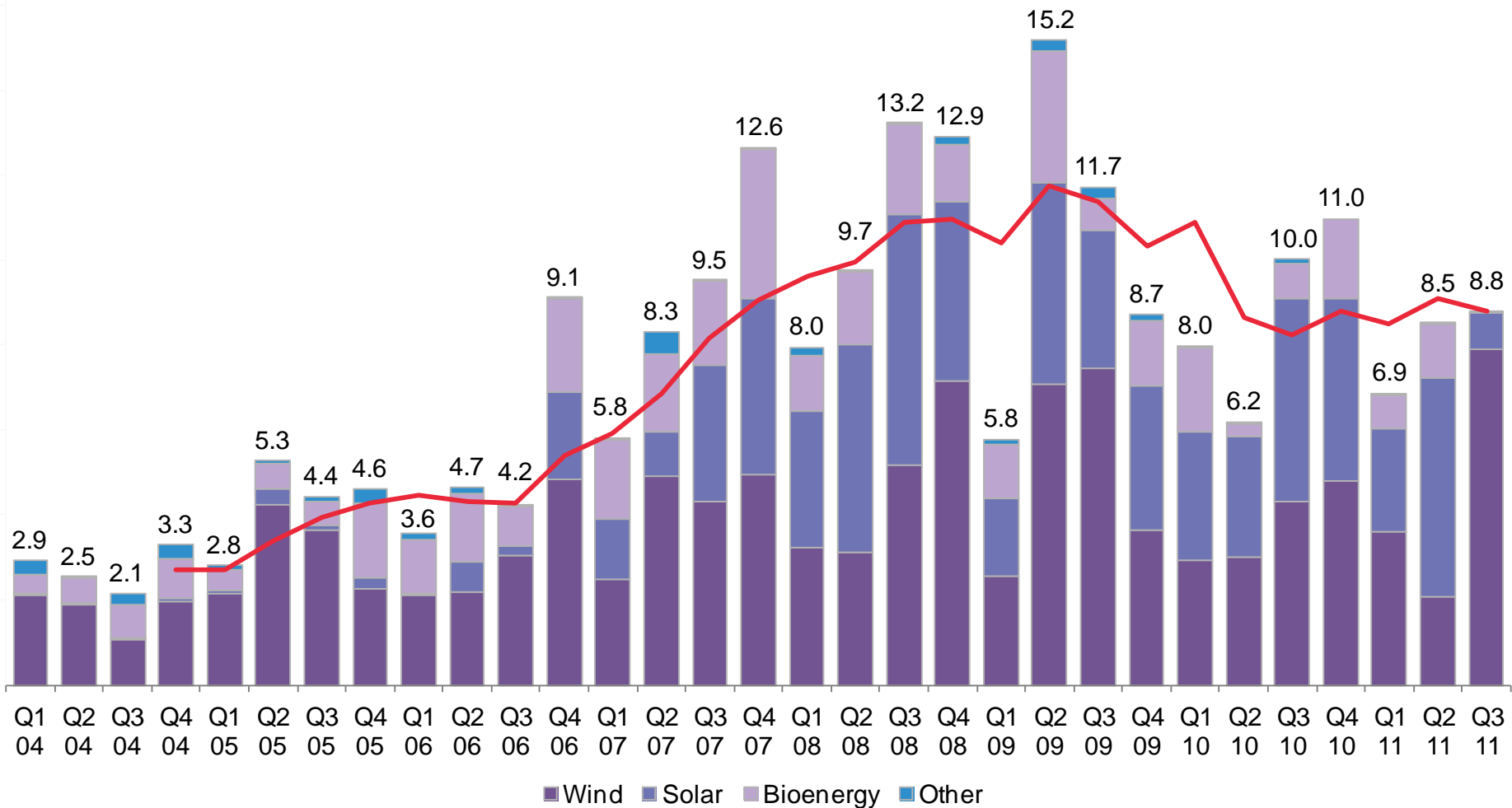
Source: Bloomberg New Energy Finance

EUROPEAN UNION - ASSET FINANCE PLUS SMALL-SCALE PROJECTS 2007-10 (\$BN)



Source: Bloomberg New Energy Finance

FINANCING OF NEW-BUILD UTILITY-SCALE ASSETS IN EUROPE: BY SECTOR, Q1 2004–Q3 2011 (\$BN)



Source: Bloomberg New Energy Finance

AUTUMN STORMS



Source: Wikipedia Commons

AUTUMN STORMS

- Clean energy share prices fall 30% in first 10 months of 2011
- Solyndra, SpectraWatt, Evergreen Solar bankruptcies
- Spreads widen sharply on debt finance for wind and solar projects in Europe during the autumn
- Pressure on feed-in tariffs for PV
- Gas prices fall further, new shale gas discoveries

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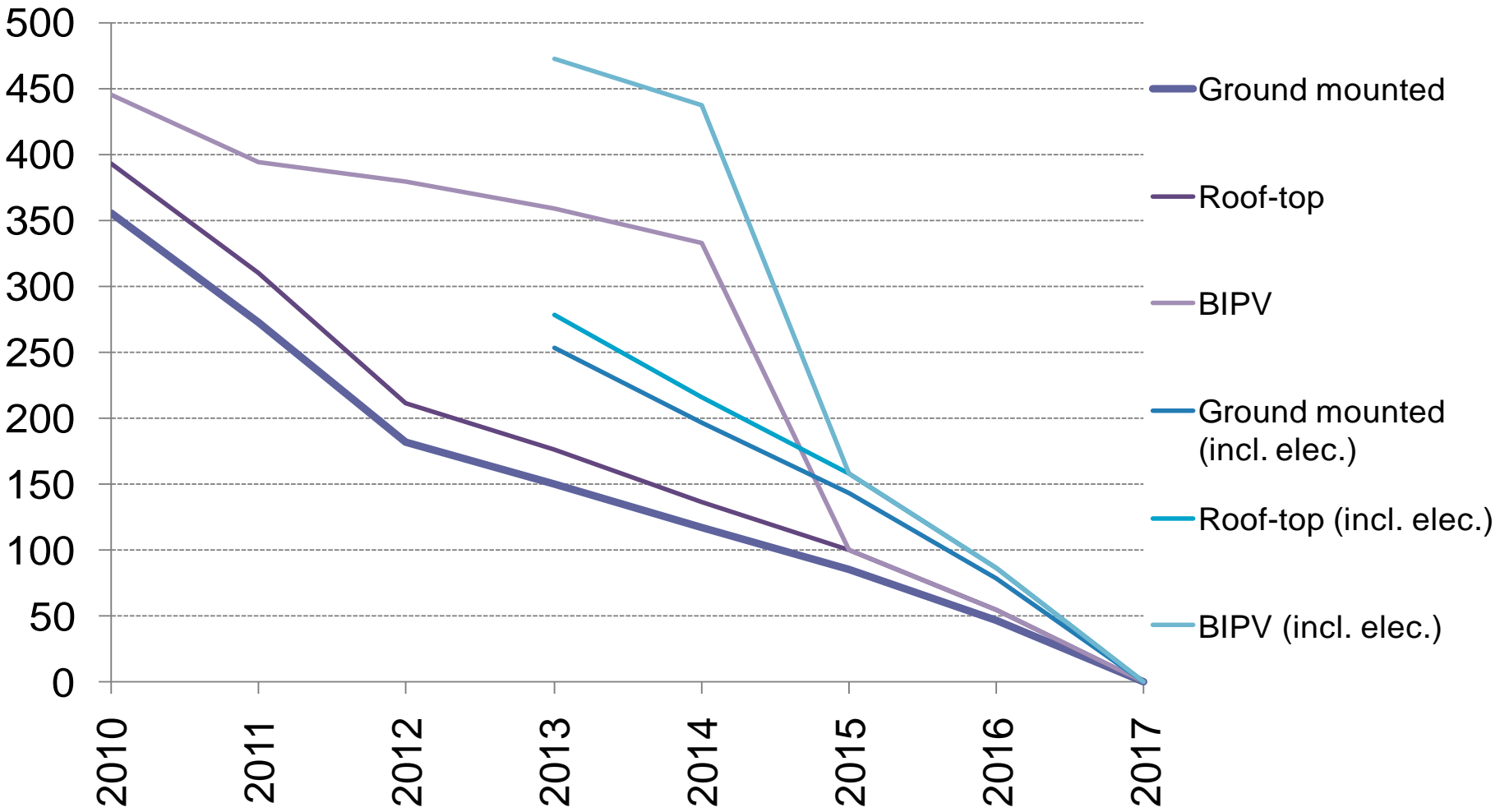
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WHICH IS GOING DOWN FASTER – PRICES OR TARIFFS?



Source: Wikimedia Commons

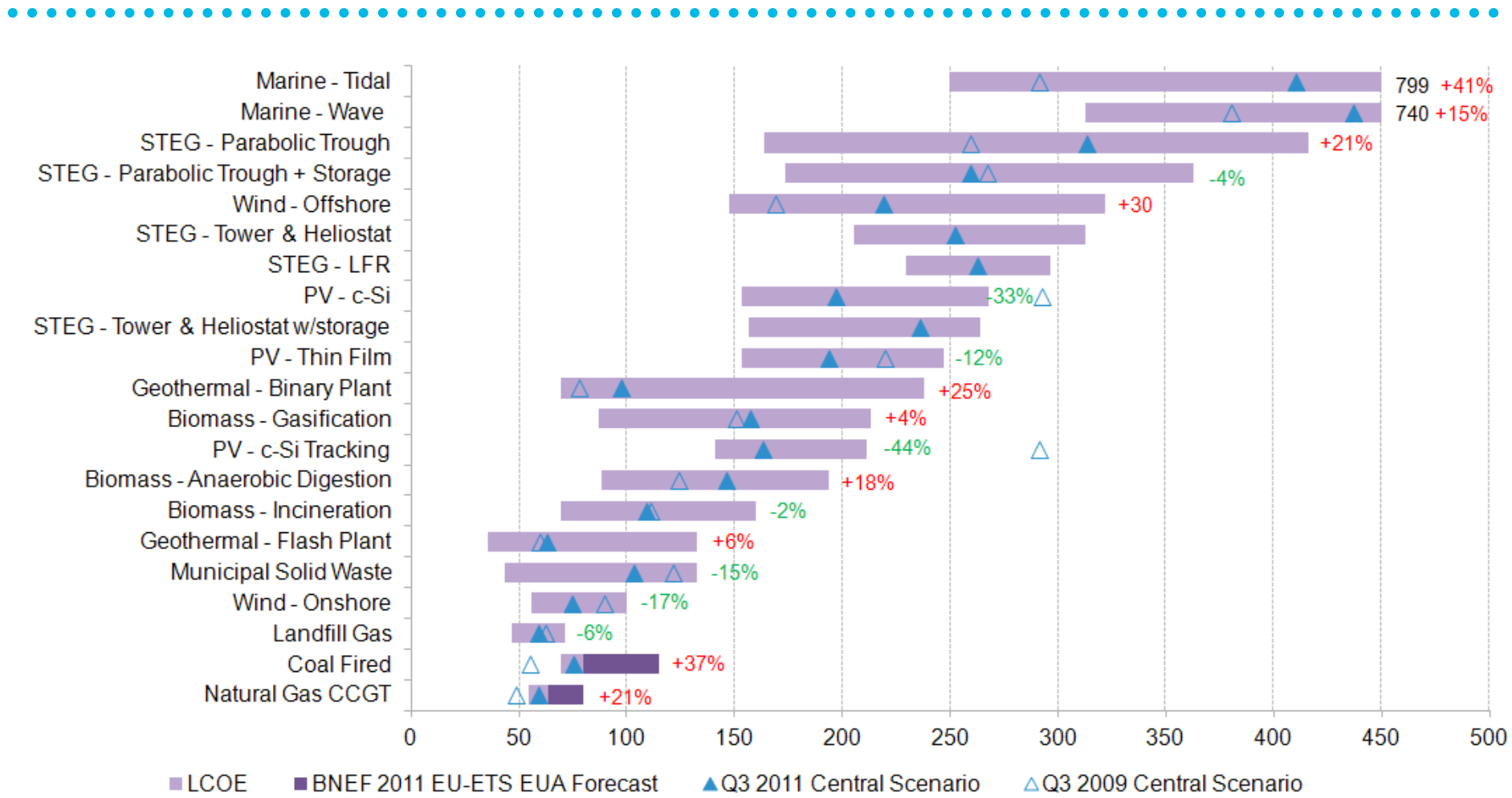
ITALIAN FEED-IN TARIFFS, 2010-16 (EUR/MWH)



Note: From 2013 the Fourth Conto Energia introduces a switch from the current “feed-in premium” system to a true feed-in tariff system.

Source: Bloomberg New Energy Finance

LEVELISED COST OF ENERGY Q3 2011 (\$/MWH)



Carbon forecasts from the BNEF European Carbon Model with a 2020 horizon \$74/tCO₂. Coal and nat gas prices from the US Department of Energy EIA Annual Energy Outlook 2011. % change represents change in mid from Q2 2011.

Source: Bloomberg New Energy Finance

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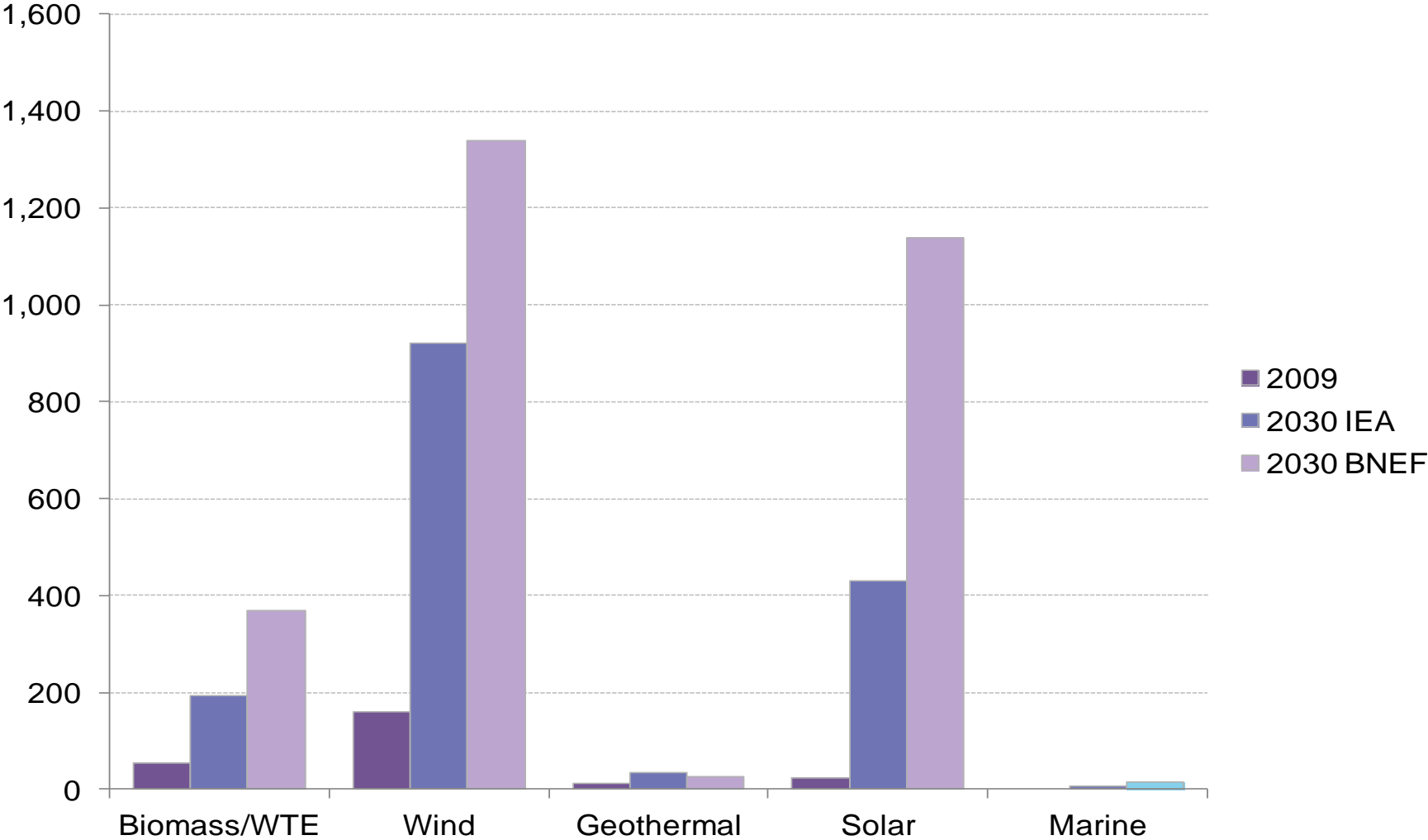
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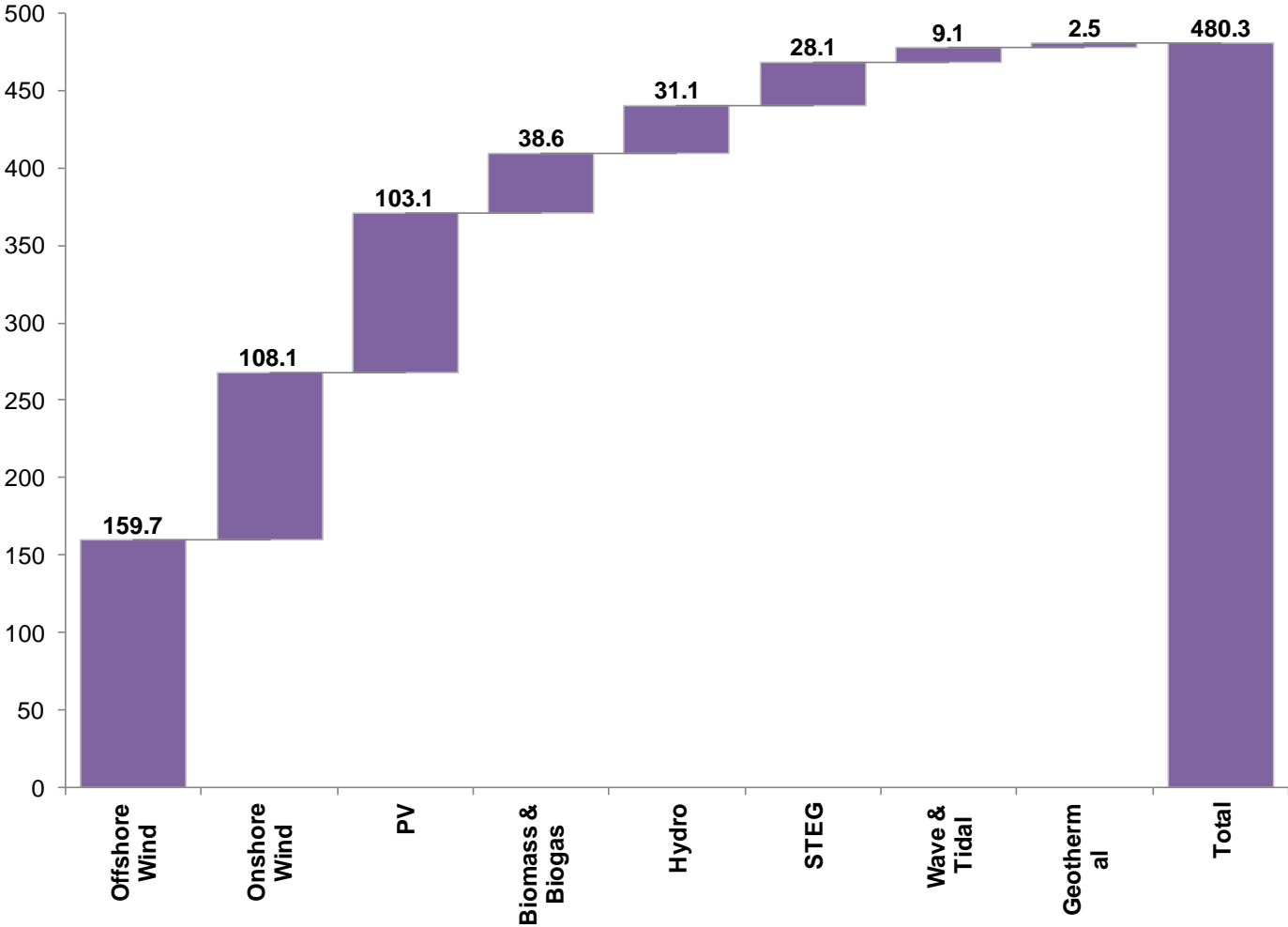
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LONGER-TERM: WORLD INSTALLED RENEWABLE POWER CAPACITY (GW) – IEA AND BNEF



Sources: International Energy Agency, Bloomberg New Energy Finance

INVESTMENT VOLUMES IN EU RENEWABLE ELECTRICITY SECTOR, 2011-2020 (EUR BN)



Note: Capex estimates include cost of project development, construction, equipment/materials. (O&M, cost of debt, other expenses excluded)

Source: Bloomberg New Energy Finance

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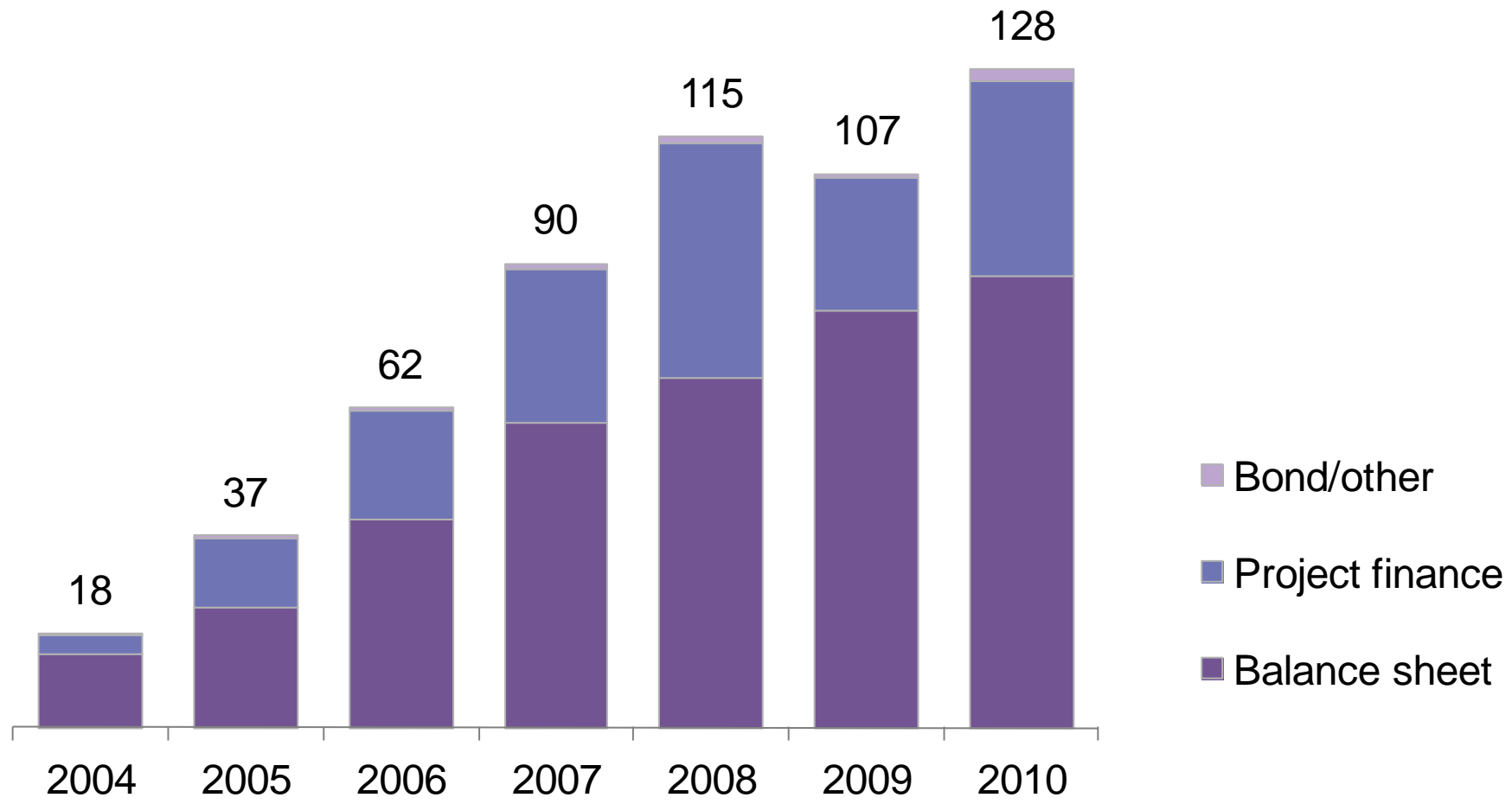
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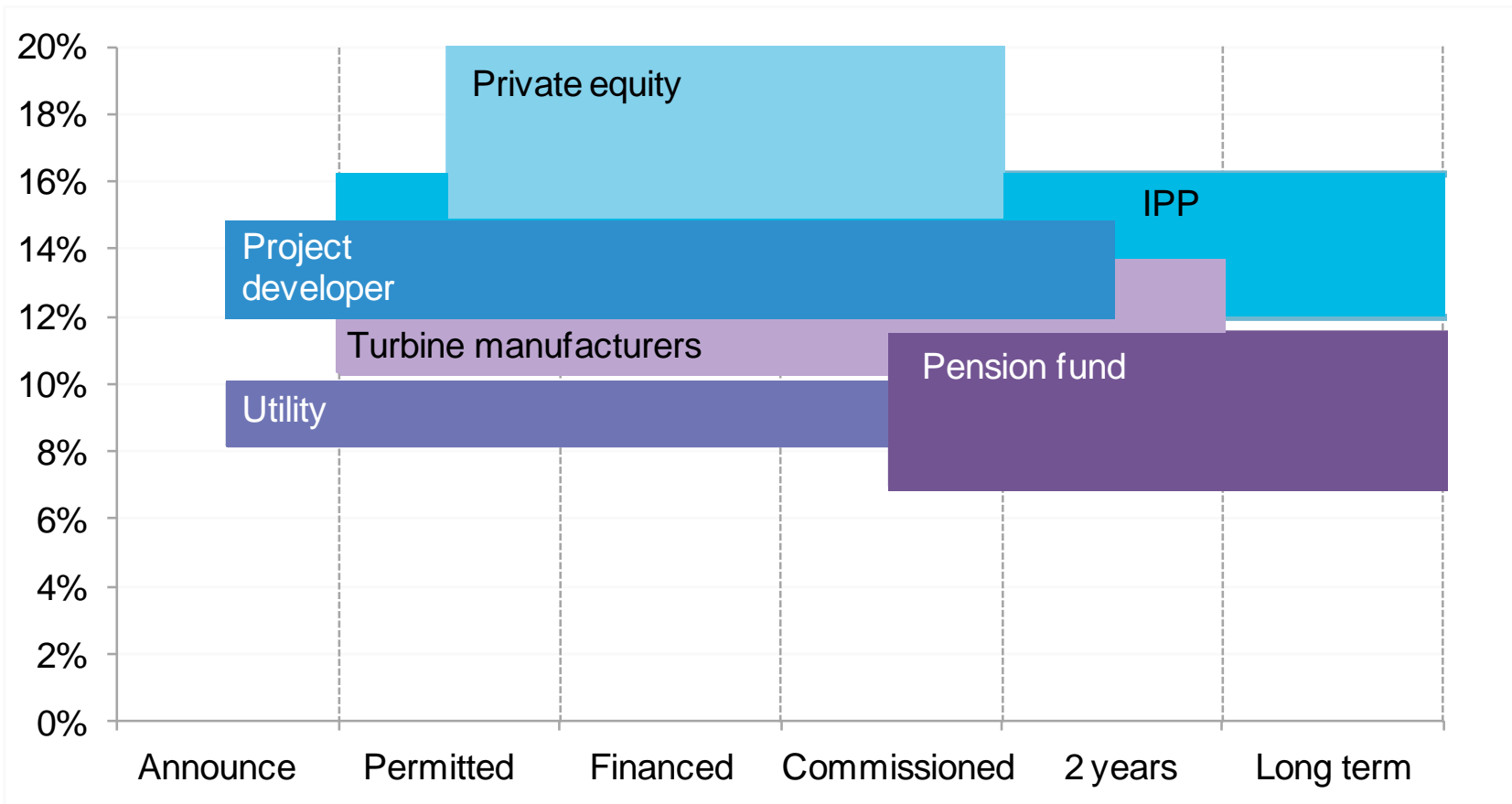
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GLOBAL ASSET FINANCE OF CLEAN ENERGY BY TYPE, 2010 (\$BN)



Source: Bloomberg New Energy Finance

ENTRY AND EXIT TIMINGS FOR EQUITY INVESTORS WITH TARGET RISK-ADJUSTED RETURNS, %



Source: Bloomberg New Energy Finance

DEVELOPMENT BANK FINANCING: 2007-2010, \$M

Institution	2007	2008	2009	2010
EIB	1,128	1,361	2,682	5,409
BNDES	1,554	6,206	2,240	3,149
KfW	697	968	1,207	1,525
Asian Development Bank	121	208	612	819
World Bank Group	207	205	474	748
China Development Bank	119	417	500	600
AFD	254	141	245	294
AfDB	0	0	68	108
OPIC	19	0	121	95
EBRD	47	365	189	482
IREDA	94	68	87	115
NIB	163	378	235	113
IDB	128	662	264	83
Total	<u>4,531</u>	<u>10,979</u>	<u>8,924</u>	<u>13,542</u>

Source: Bloomberg New Energy Finance

FINANCING MECHANISMS

- Development banks likely to remain important, and could become even more so
- Commercial bank project finance being restricted by euro area debt worries and Basel III, but Chinese banks have money
- Bond issues for projects: mixed fortunes – Breeze, SunPower
- Export credit agencies: important on big offshore wind, solar thermal projects – eg Thornton Bank, Acciona Termosolar
- Debt funds: a bank organises a fund to co-invest in projects, institutional investors put money into fund
- Green tax-efficient retail products
- Institutional refinancing of projects initially backed by banks

FINANCING OPTIONS – SPECIFIC IDEAS

- Development banks: strengthen capital and increase focus on RE
- Commercial banks: government shareholders could prioritise RE
- Debt funds, institutional refinancing: key role for insurers
- Institutional investors, eg pension funds: regulation on holdings
- Green tax-efficient retail products: introduce tax incentives
- Micro-generation: leasing products from banks or utilities

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FINANCING OPTIONS – OVERVIEW AND CHOICES

ANGUS MCCRONE

AMCCRONE1@BLOOMBERG.NET

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