

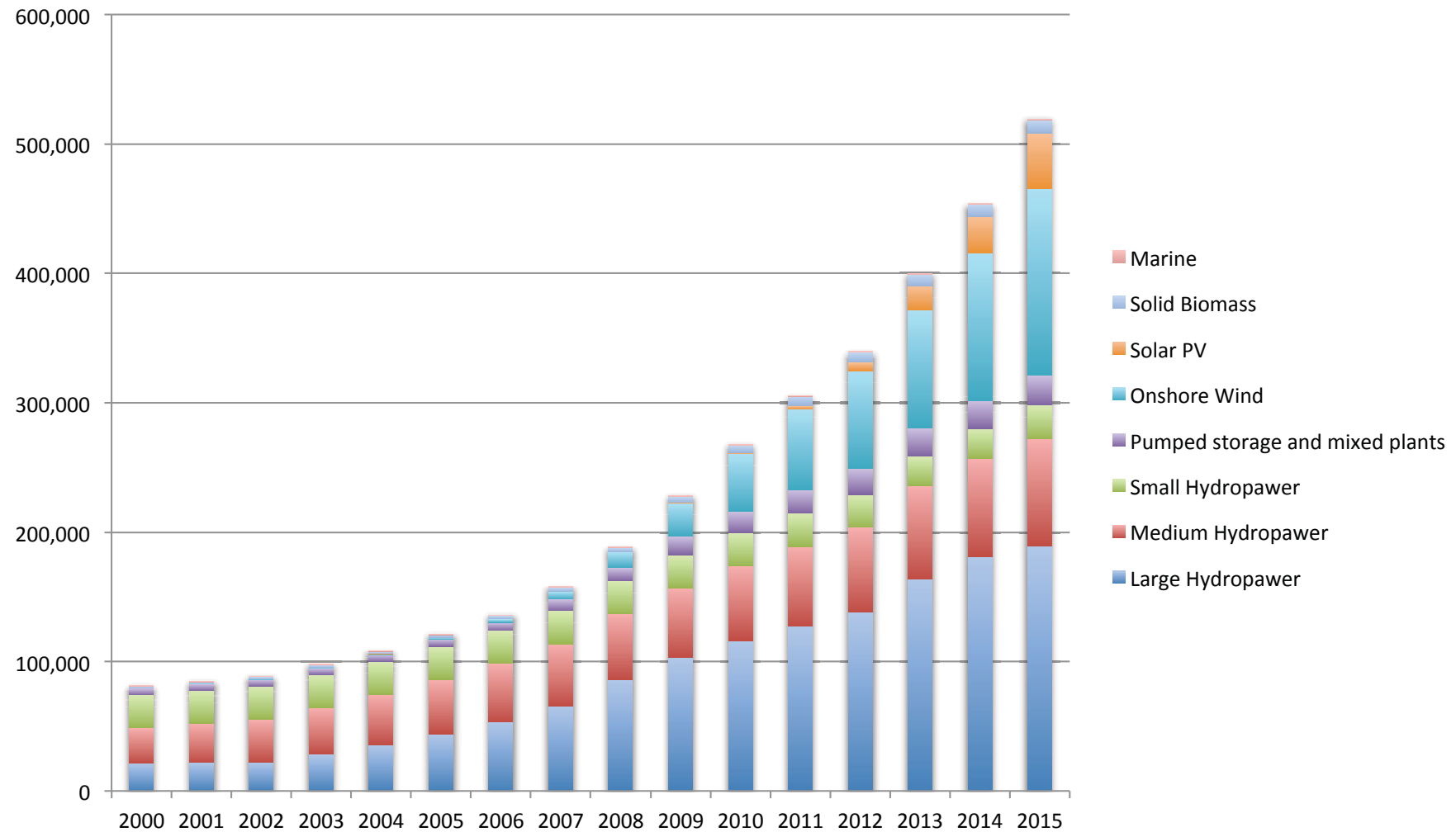
China: renewable target

- 2030 target (NDC)
 - Share of Non fossil fuel in primary energy consumption: from about 10% to 20%
 - No clear reference of ratio of renewable, but significant part is expected to come from renewable sources (cf. IRENA, 2014)
 - It is said that in 2012, China set a target to raise renewable share up to 20% by 2015.
 - Power installation capacity will expand from 968GW in 2010 to 1,786GW by 2020, renewable installation of which will expand from 250GW (about 26%) in 2010 to at least 600GW (33.6%) by 2020.
- 2050 scenario
 - Energy Research Institute, NDRC, China, 2015 consider a high penetration of renewables scenario.
 - 60% of final energy consumption in 2050, 86% of power generated will come from renewable sources.

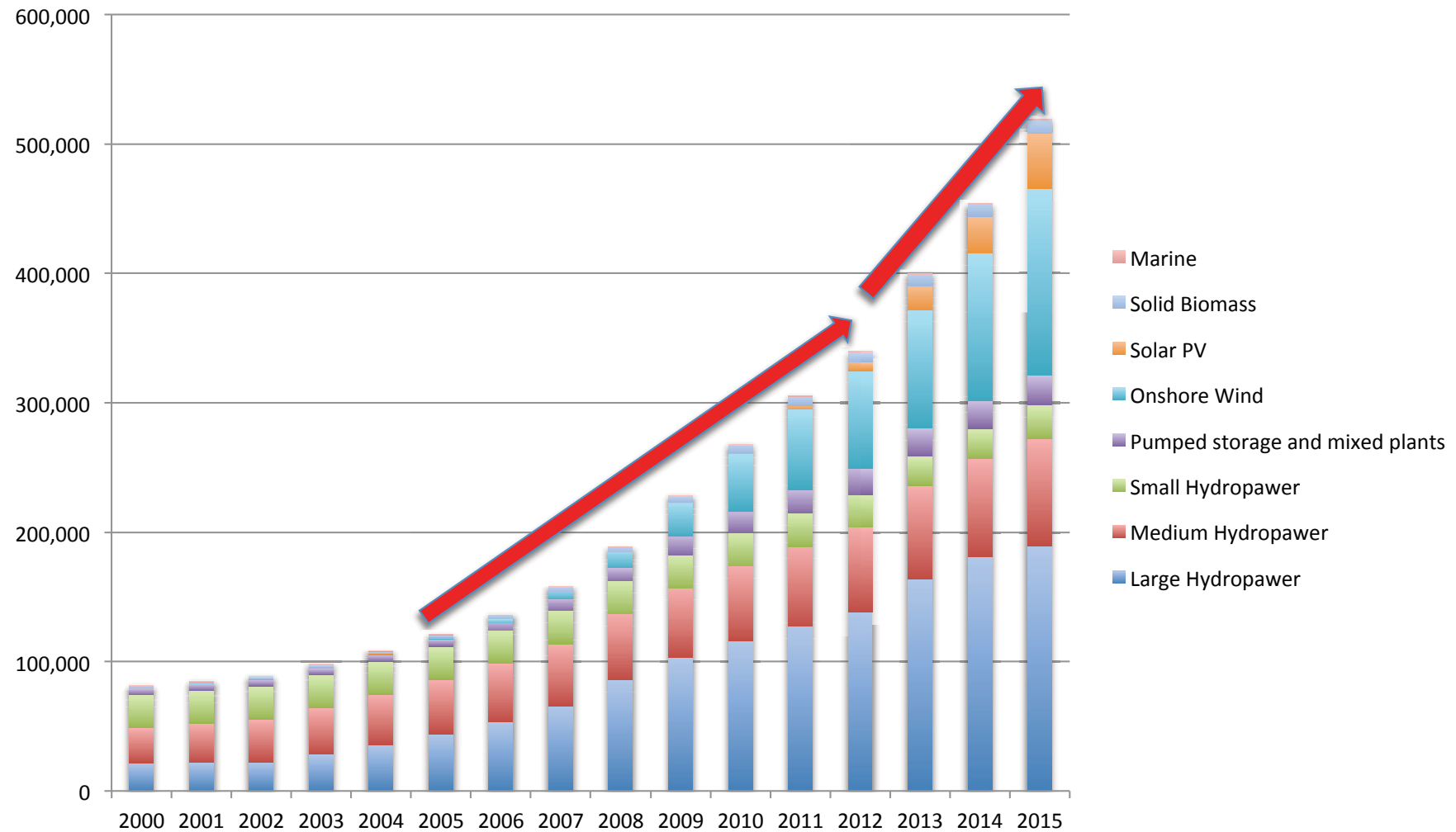
China: measures to promote renewables

- Introduction of FIT
- Subsidies by the Central government and local governments
 - Subsidies for installation
 - Subsidies for grid construction
- Considering RPS
- Grid network
 - Clarify the responsibility to construct, maintain and renovate the grid in line with renewable generation plan by Provinces and the Central Government on the part of grid operators (2006 Ordinance on renewable by NDRC)
 - Move towards an international grid connection between China (中国国家電網公司), Korea (KEPCO), Russian Grid (ROSSETI)、Softbank.

Renewable installation capacity: China



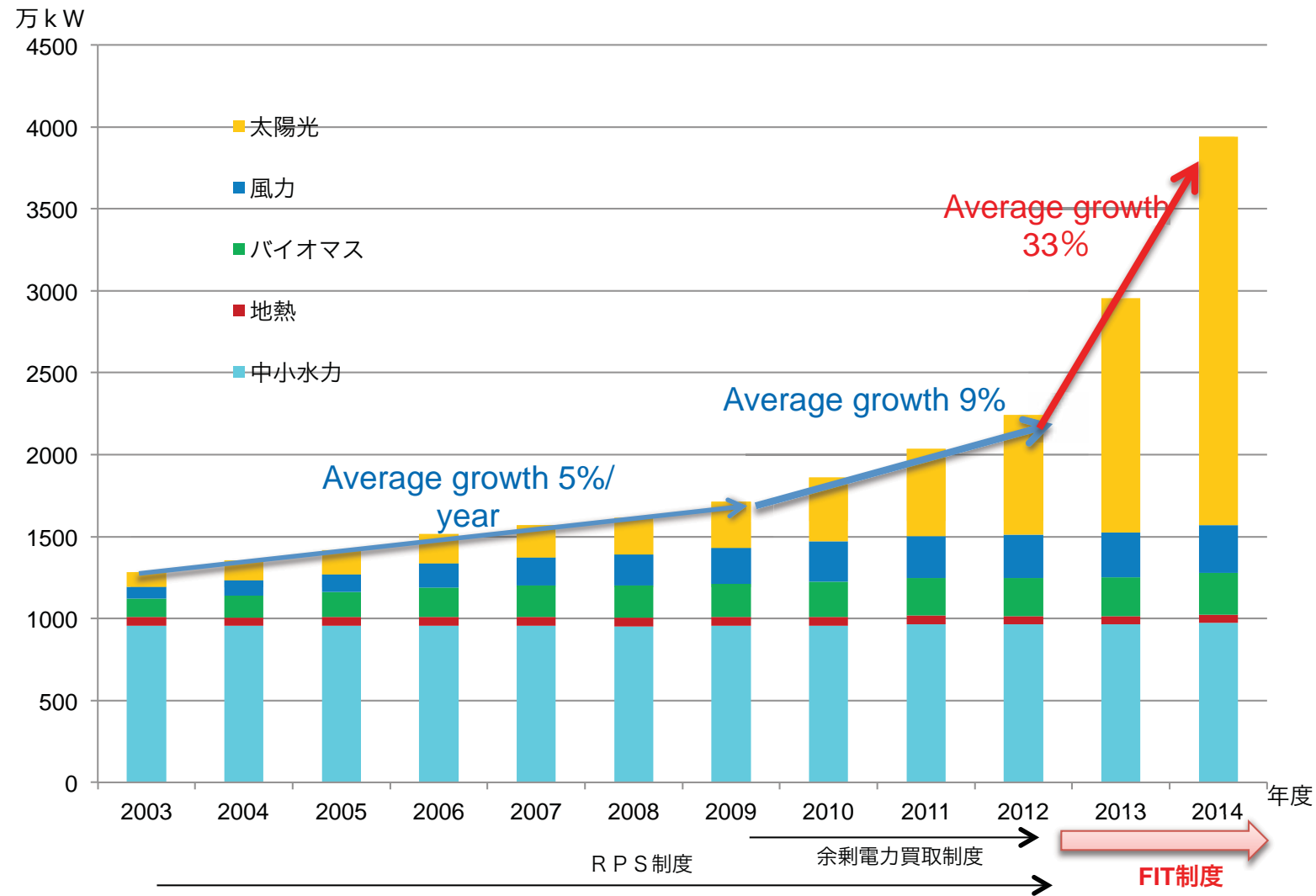
Renewable installation capacity: China



Japan: renewable target

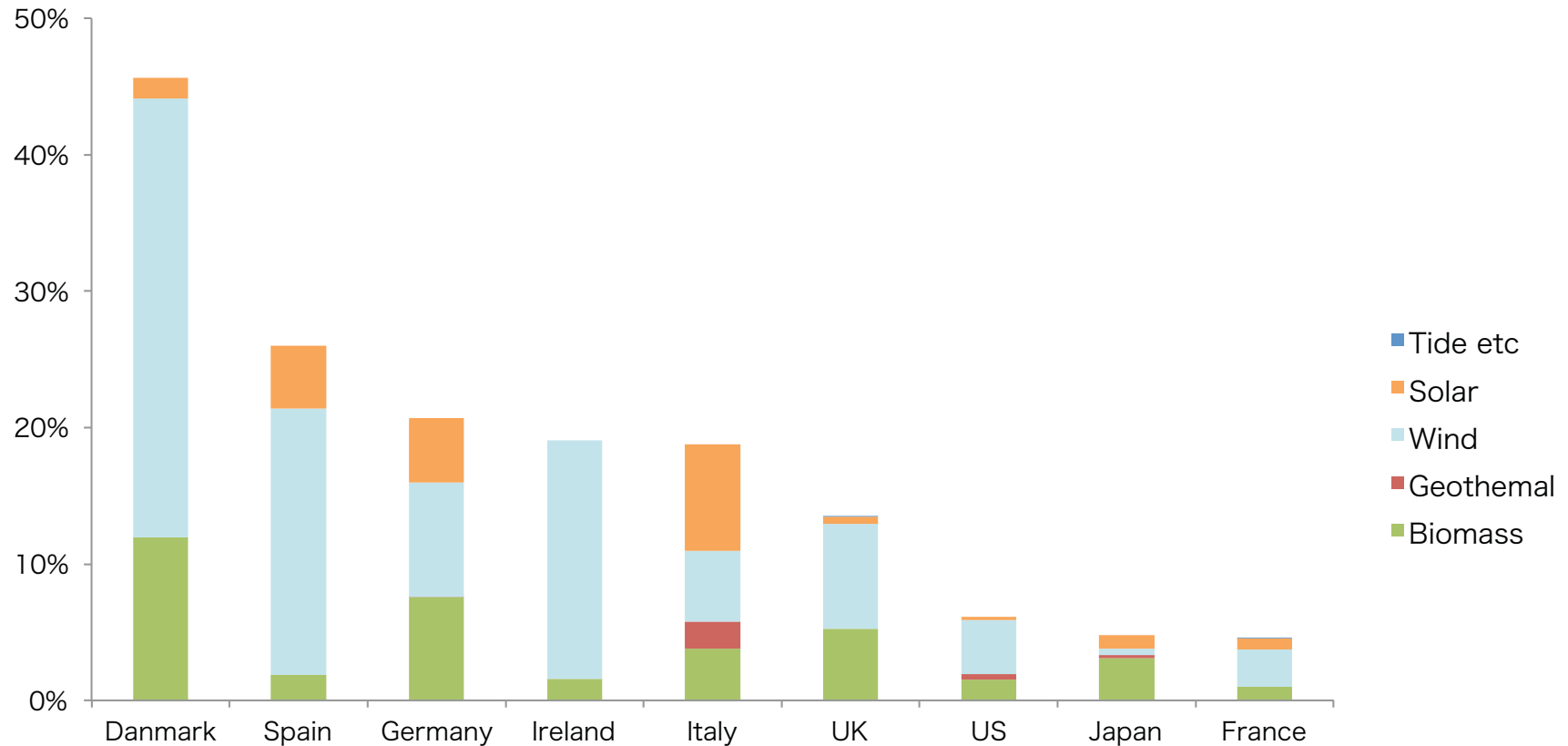
- By the introduction of FIT in 2012, RPS was set in place under the RPS act (2002).
 - In FY2014, 17.33GkWh (about 1.7% of power generated)
- Accelerated expansion of renewable energy under the Feed-in Tariff (FIT)
 - After 3.11, the Act on FIT was passed in Aug. 2011 and has been implemented from 1st July 2012.
 - Requires 10 Power companies to purchase all electricity from accredited renewable sources with the price determined by the independent committee, members of which are elected by Parliament (see Figure 1 of the draft).
 - “Introduction of renewable energy should be accelerated as far as possible for 3 years from 2013 on and should be aggressively promoted thereafter” (Strategic Energy Plan, 2014)
 - Under the FIT, share of renewable energy including large hydro has now increased from 8% (2010) to about 12% of power generated in 2015, which corresponds to about 3% of primary energy supply, but it is still low compared to other developed countries.
- Japanese energy policy has been mainly elaborated and implemented based on the “Strategic Energy Plan”, which the Basic Act on Energy Policy (2002) obliges the government to formulate.
 - Strategic Energy Plan is to be revised at least every 3 years and to be usually accompanied by the Long-term Energy Supply and Demand Outlook.
 - It is not really “target”.
 - Doubling renewable in 2030
 - No clear target for renewable other than electricity

Renewable installation capacity: Japan



(JPEA出荷統計、NEDOの風力発電設備実績統計、包蔵水力調査、地熱発電の現状と動向、RPS制度・固定価格買取制度認定実績等より資源エネルギー庁作成)

Share of renewables in Electricity Production (excluding hydro)(2013)



Sources: International Energy Agency, Renewables Information 2014 and Electricity Information 2014.

Assessment of actions (1)

| | Candidate indicators | USA | | China | | Japan | |
|------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2005-2012 | 2013-2025 | 2005-2012 | 2013-2025 | 2005-2012 | 2013-2025 |
| Renewable energy | (1) Target setting | N(Y) | N(Y) | N | N(Y) | N | N(Y) |
| | (2) Measures to promote RE (FIT, RPS, etc.) | N(Y) | N(Y) | N(Y) | N(Y) | N(Y) | N(Y) |
| | (3) Grid | N(Y) | N(Y) | N | N(Y) | N | N |
| | Assessment | BC | B | C | BC | C | BC |

Assessment of actions (2)

| | Candidate indicators | EU | | Germany | | UK | |
|------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2005-2012 | 2013-2025 | 2005-2012 | 2013-2025 | 2005-2012 | 2013-2025 |
| Renewable energy | (1) Target setting | Y | Y | Y | Y | Y | Y |
| | (2) Measures to promote RE (FIT, RPS, etc.) | Y | Y | Y | Y | Y | N(Y) |
| | (3) Grid | N(Y) | Y | N(Y) | N(Y) | N(Y) | N(Y) |
| | Evaluation | AB | A | AB | AB | B | B |

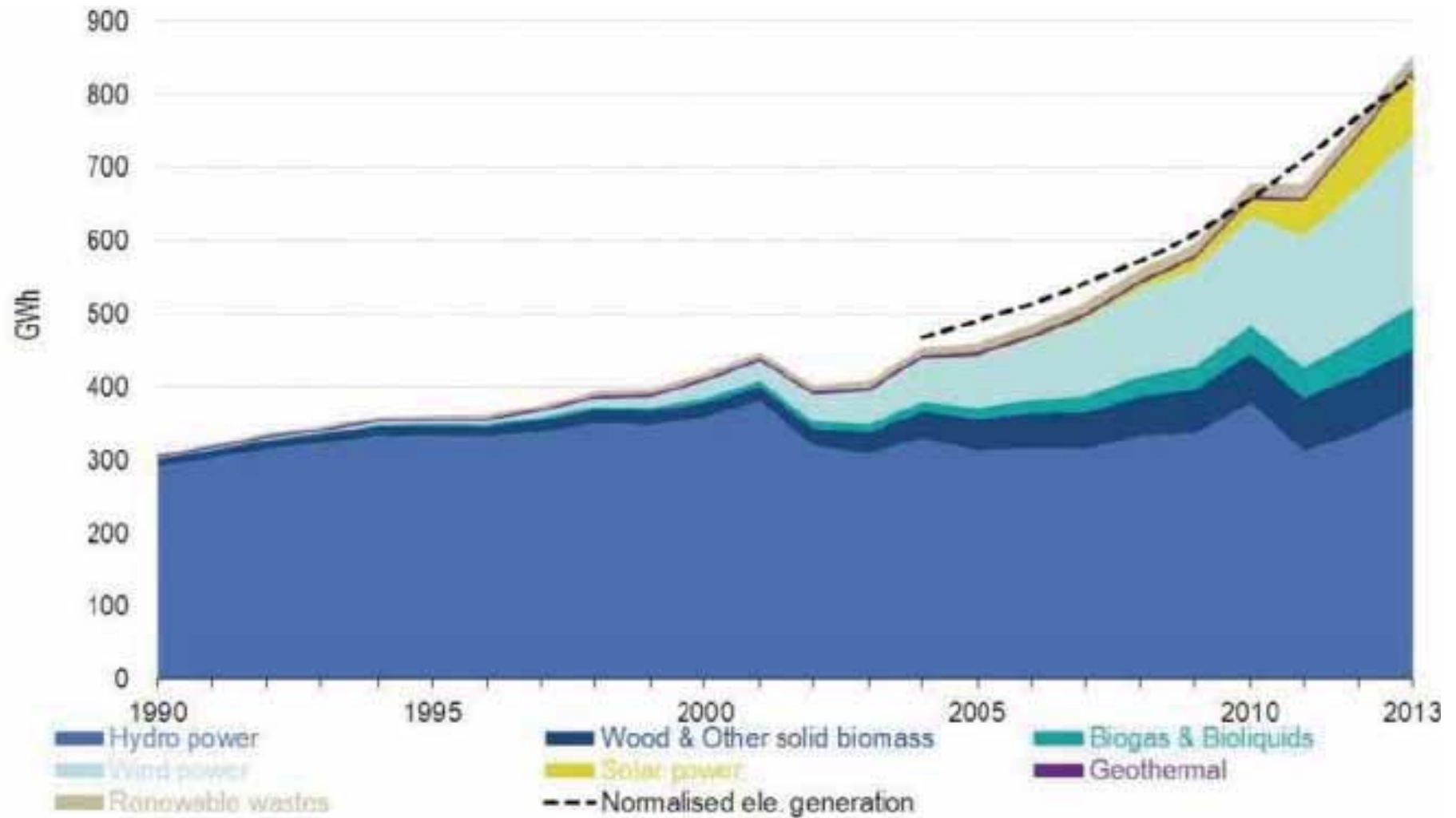
Some remarks (1)

- **Elaborating Indicators** for assessing country's renewable policy and **assessing it based on indicators** is a **valuable exercise for providing a new/multi-sided look at the status of the policy**.
 - Considering what would be appropriate indicator(s) is worthy for considering **what would be the action(s) which reflect/determine the strength/effectiveness of actions**.
 - From such perspective, we identify **3 actions for renewable policy**:
 - 1) Target setting
 - 2) Measures to promote RE (FIT, RPS, etc.), and
 - 3) grid policy.
 - Any other indicator(s)?
- **Assessment (rating)** is not to rank countries **rather to provide a basis for better understanding country's efforts and challenges, for enhancing transparency of actions and for facilitating dialogue between countries**.
- **Assessment (rating) may change**:
 - Because of **policy developments/changes**
 - Because more information becomes available.
- **Information on actions** is critical.
 - Without appropriate data/information, **no appropriate assessment**.
 - **Important to have a rule on information** to be provided by countries:
 - For negotiation on information of NDC and transparency of action.

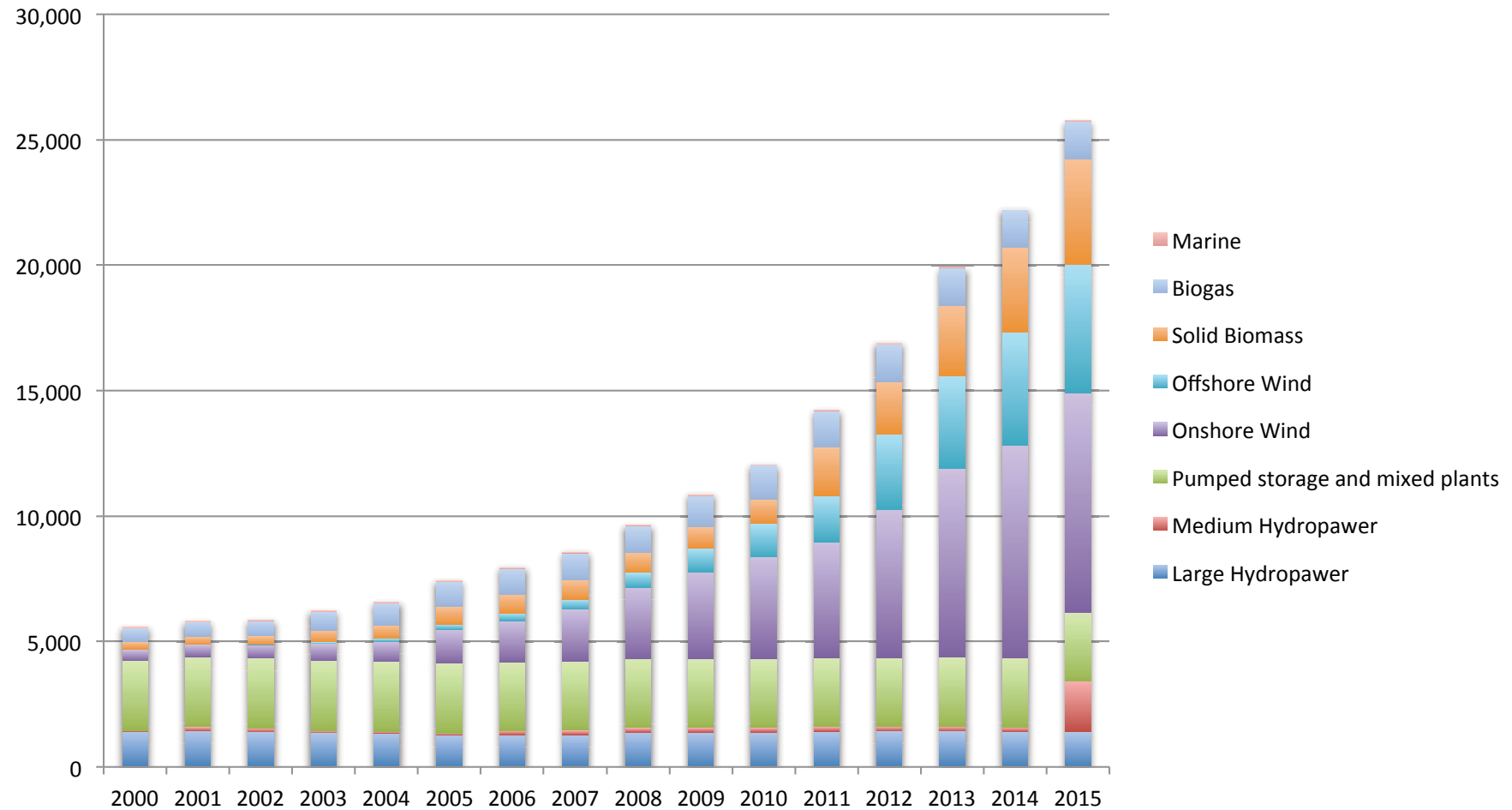
Some remarks (2)

- Difficulties and challenges
 - Margin of discretion to assess
 - Countries undertake a variety of actions at the various levels and their effectiveness varies depending on circumstances.
 - Putting the same rate (for instance, “N(Y)”) might not be because of the same reason.
 - Taking actions is not necessarily effective in achieving the outcome, and countries might achieve the expected outcome without significant actions.
 - If cost of renewable would become lower sufficiently enough to be competitive with other sources, introduction would be enhanced even without significant actions.
 - Some complementary tools/exercises could be useful.
 - Describing concrete actions and challenges in more details as complementary tool would enhance understanding and dialogue on them.
 - Assessment/ dialogue with experts on targeted country.
 - Linking with/ complementary use of some performance indicator(s)
 - Ex. Trends in capacity of renewable installation capacity

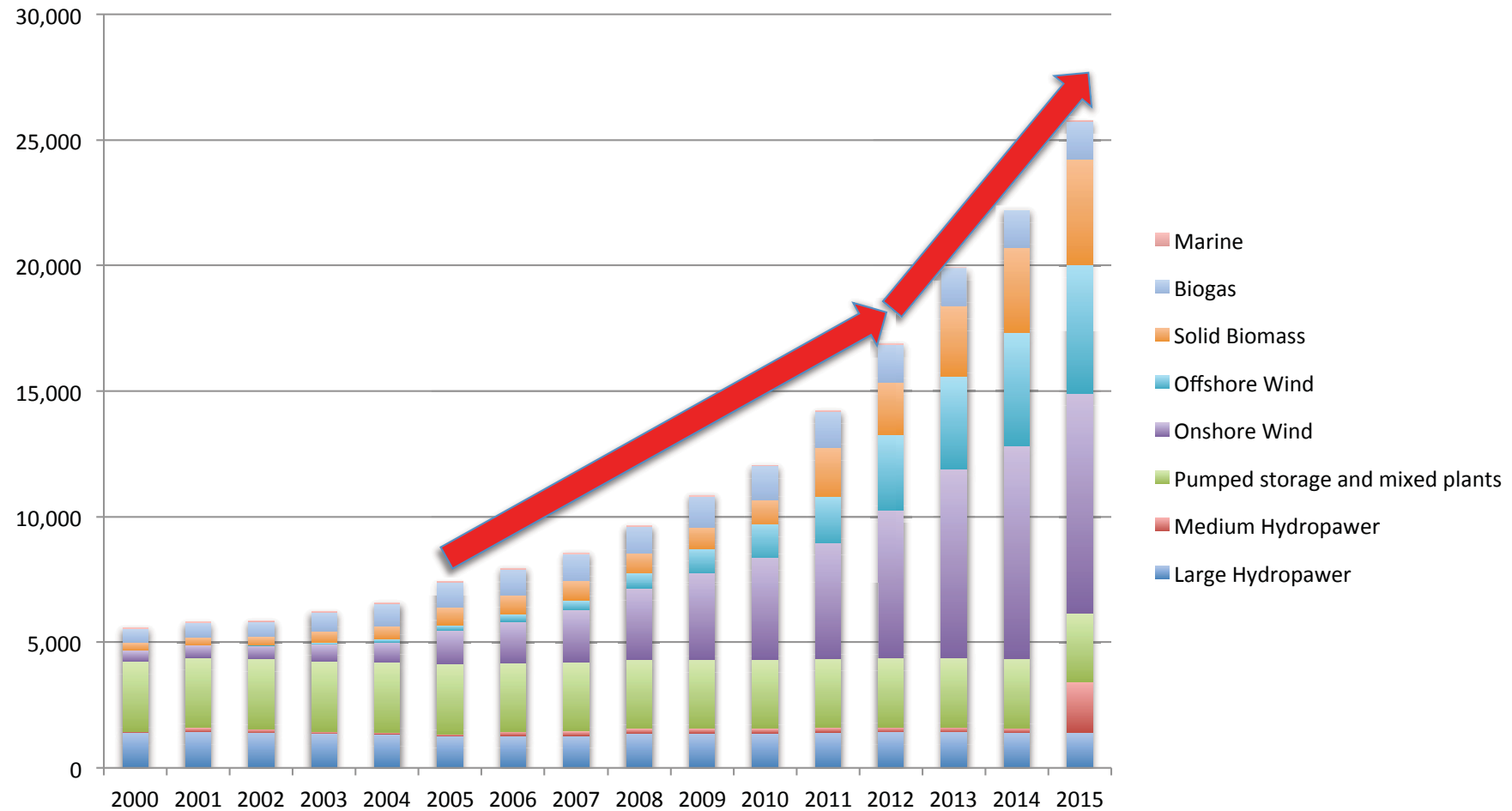
Trend of EU Renewable power generated



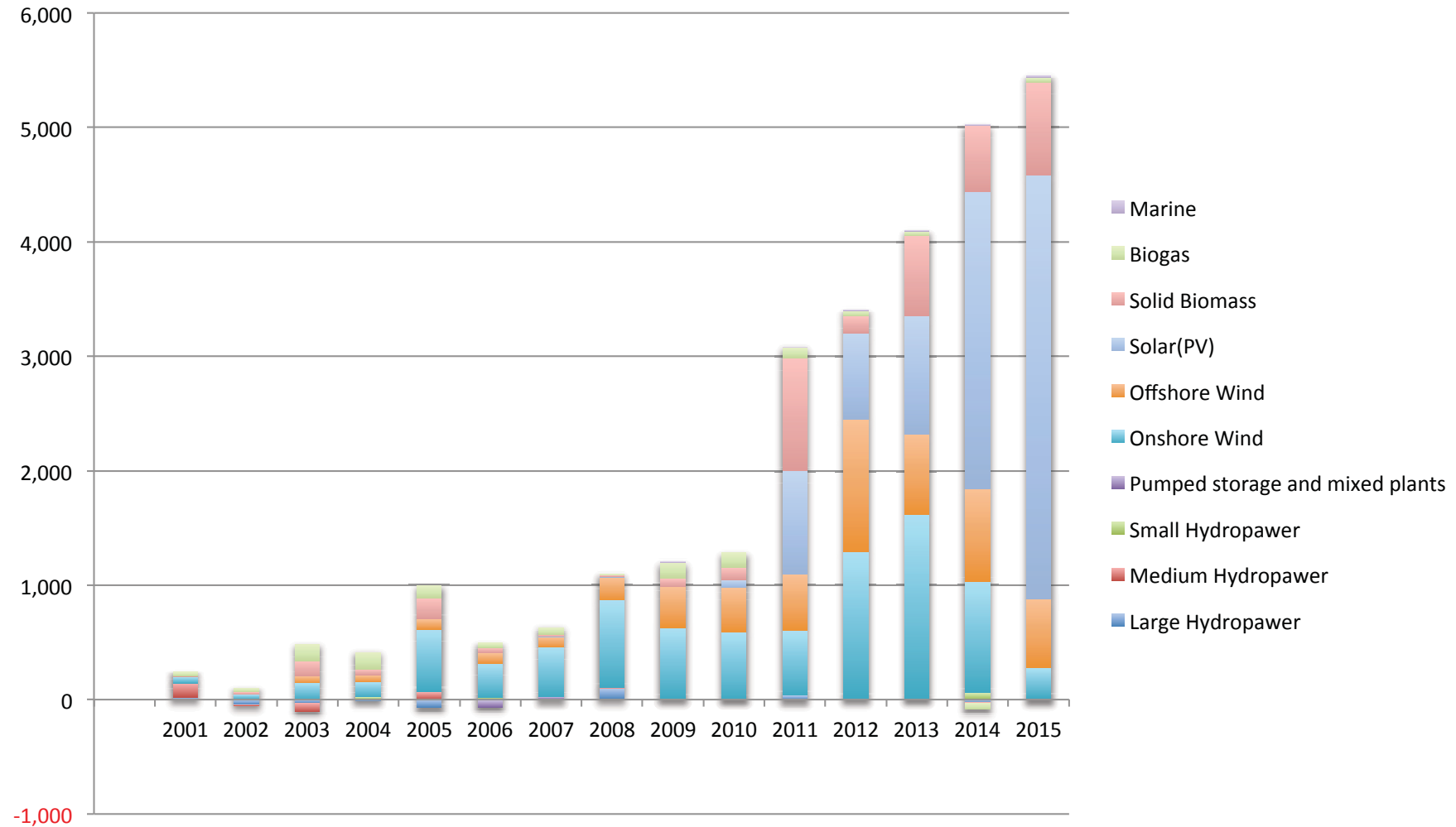
Renewable installation capacity: UK



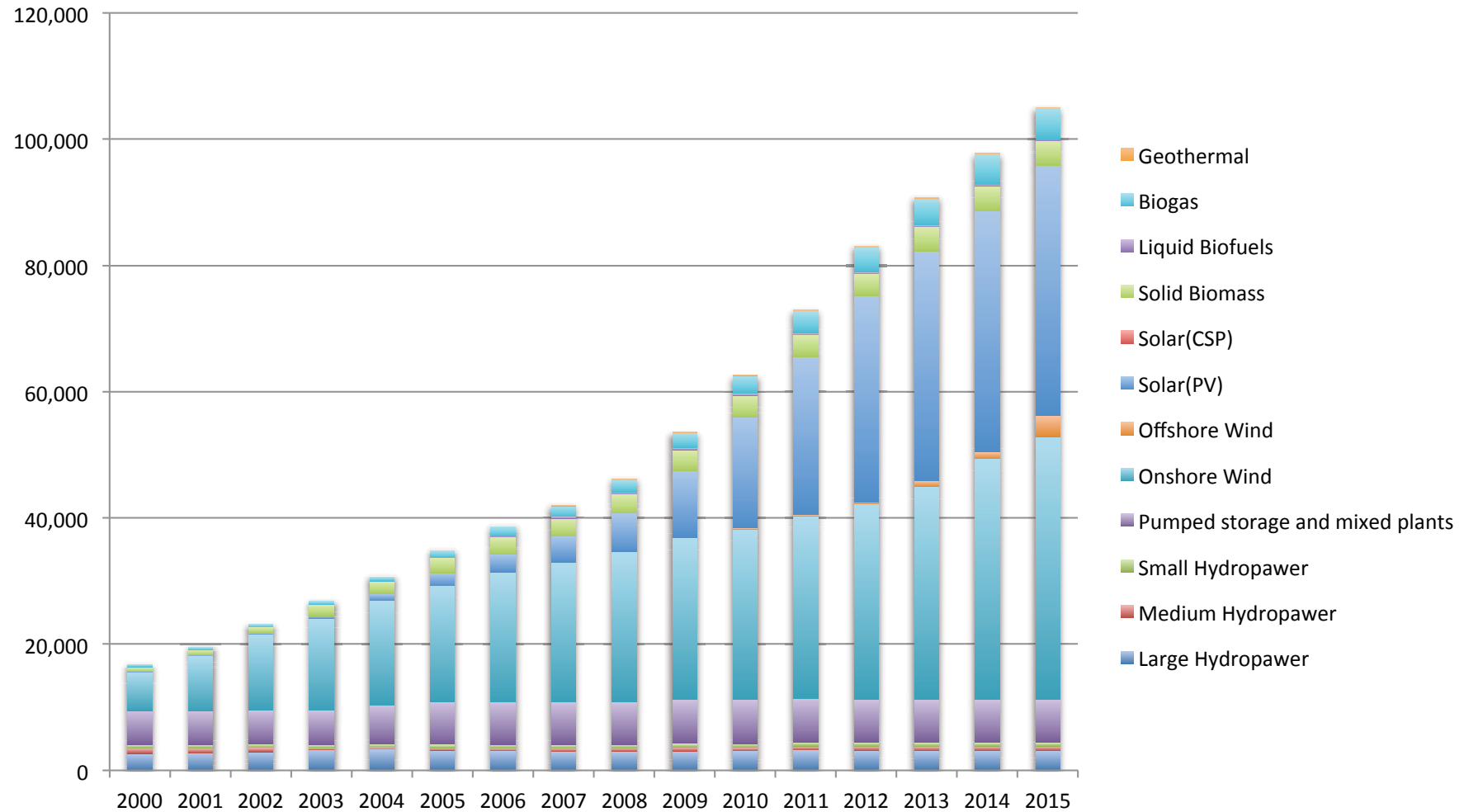
Renewable installation capacity: UK



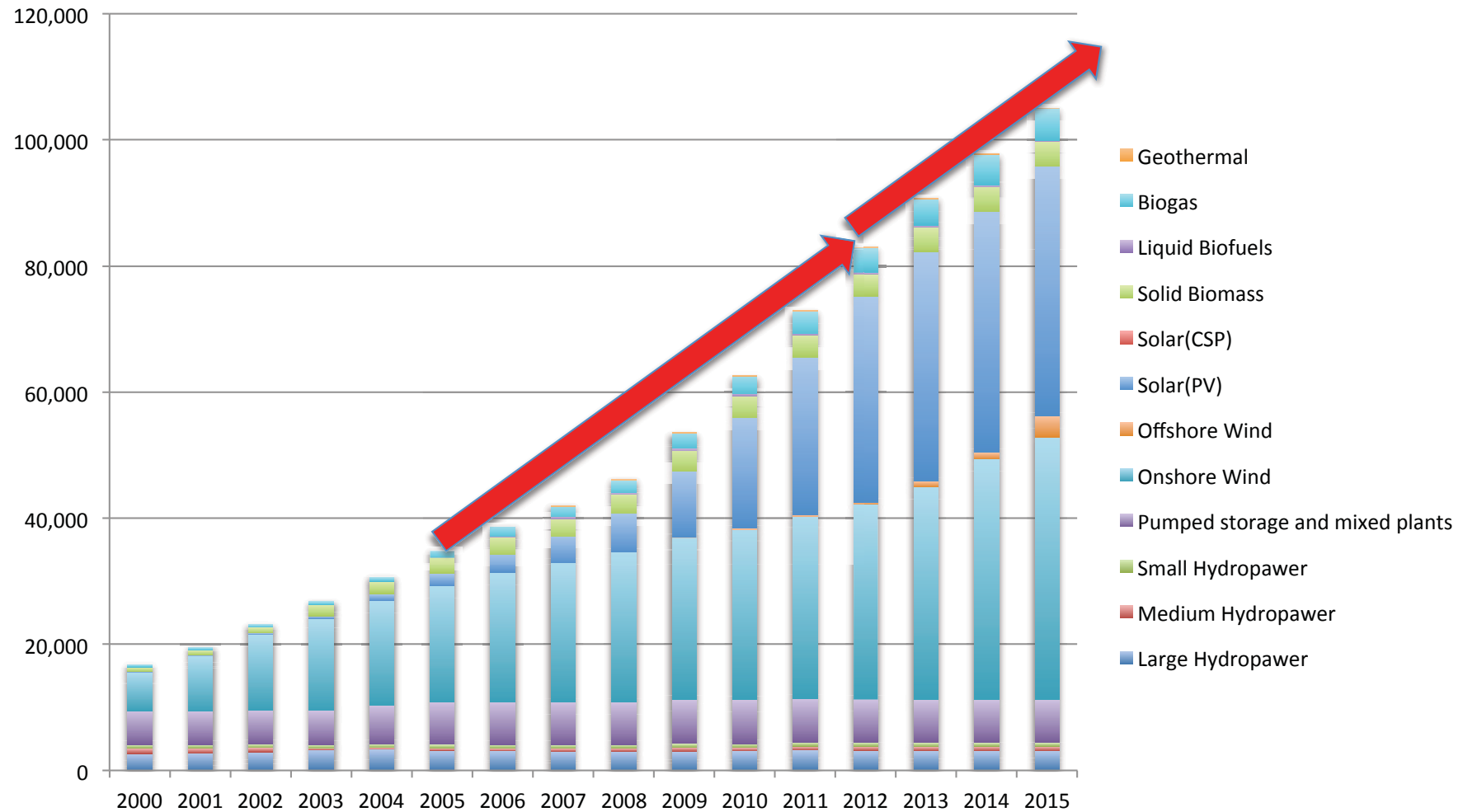
Additions of renewable installation capacity: UK



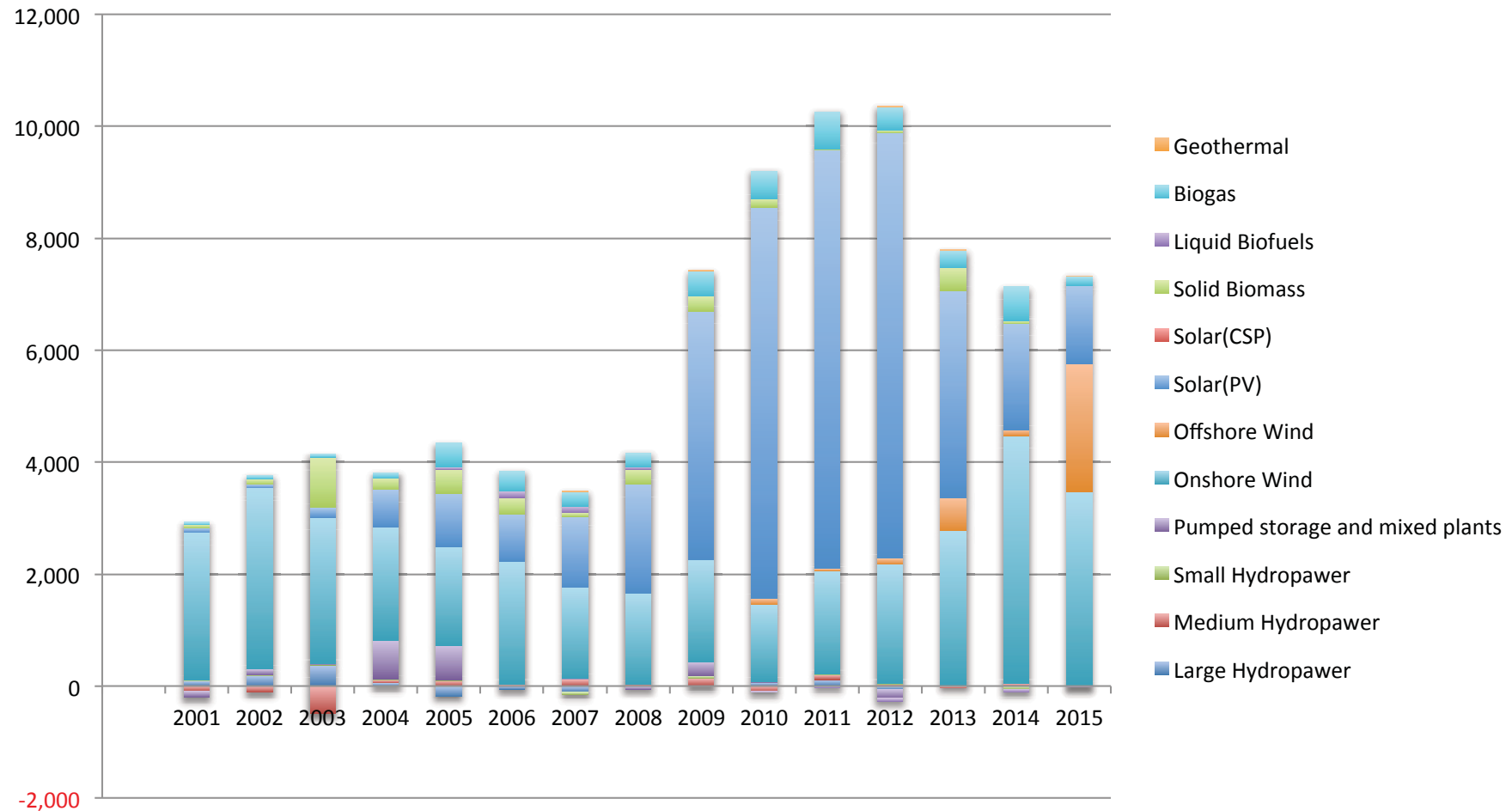
Renewable installation capacity: Germany



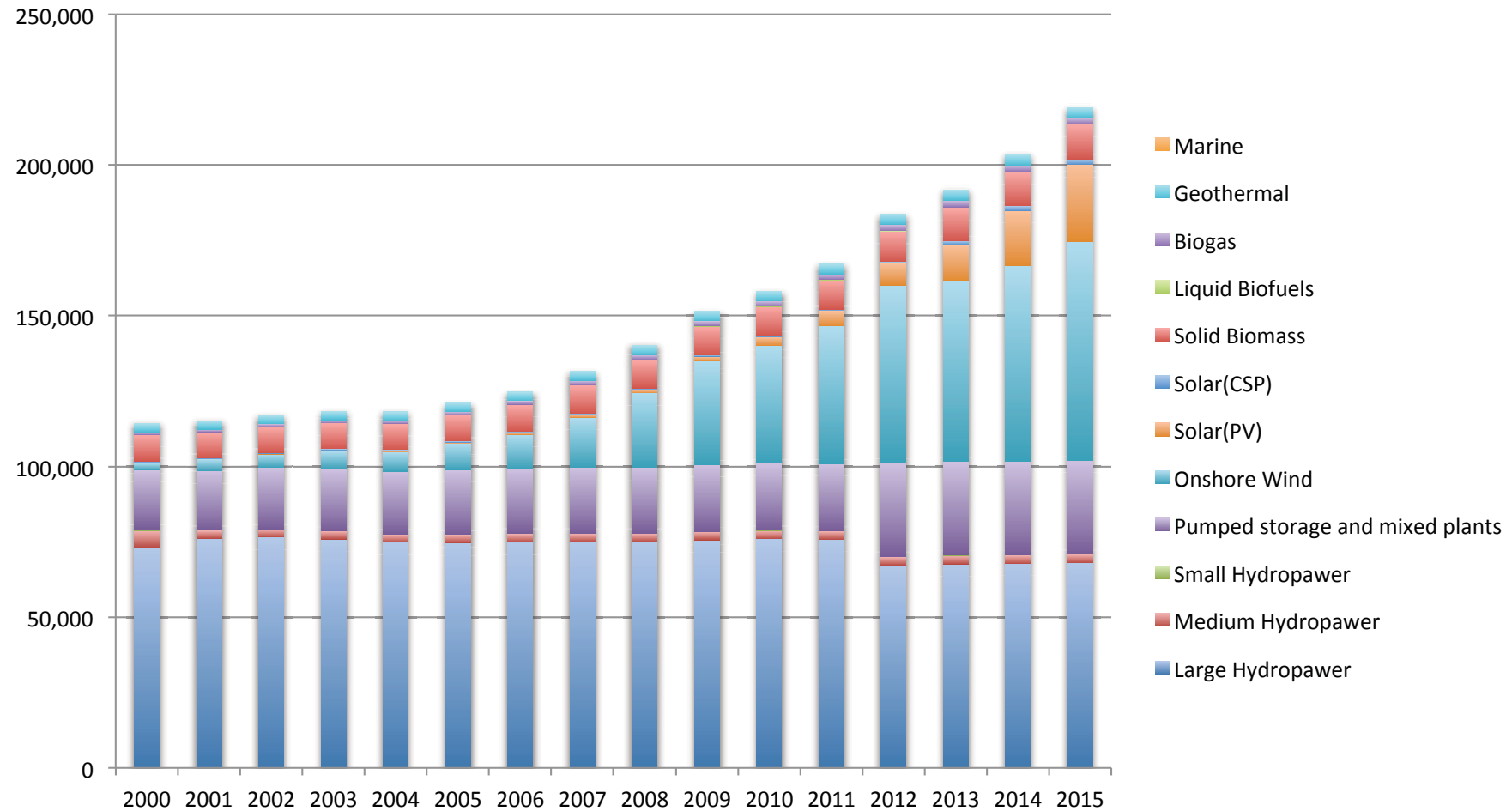
Renewable installation capacity: Germany



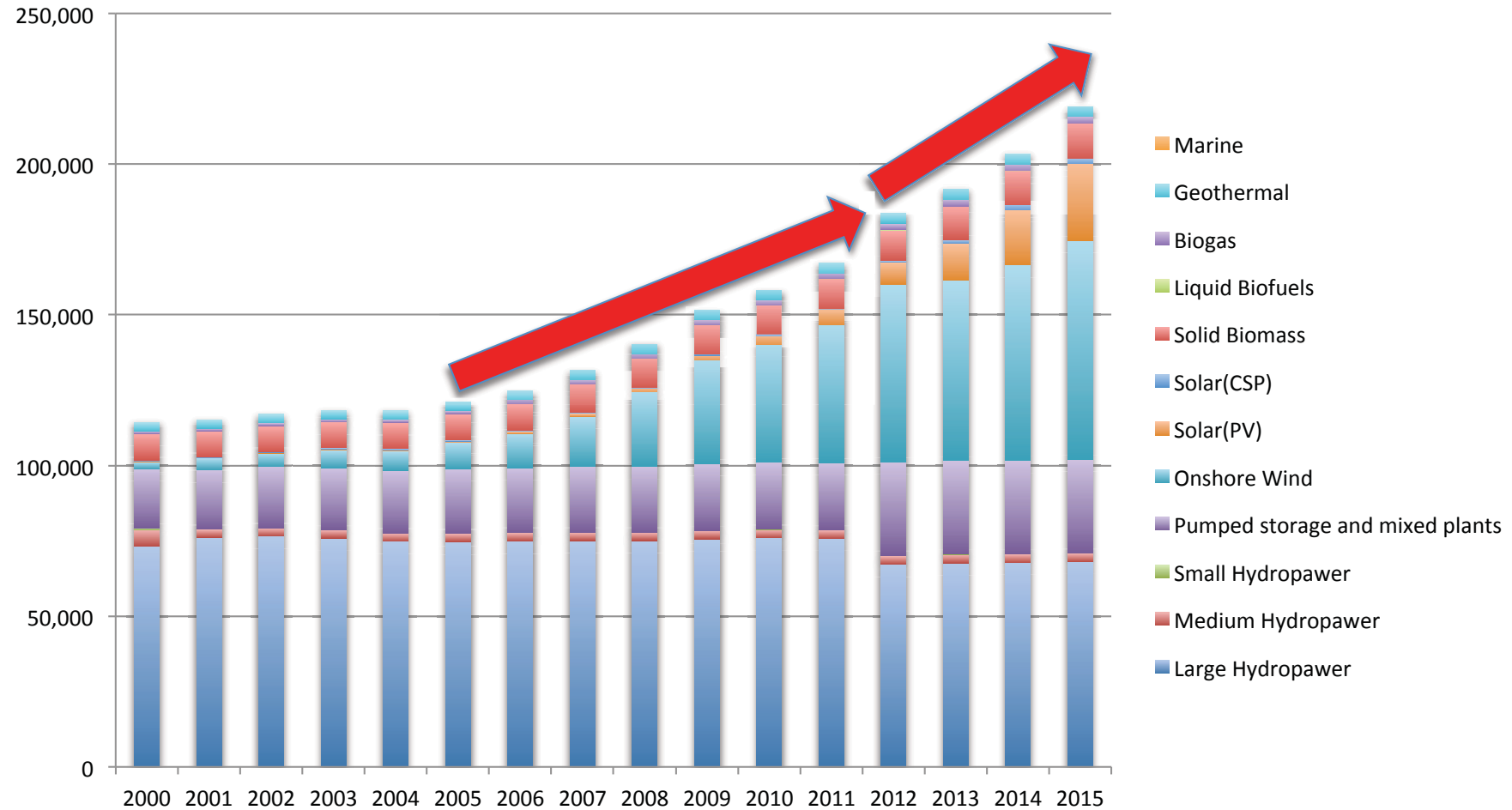
Additions of renewable installation capacity: Germany



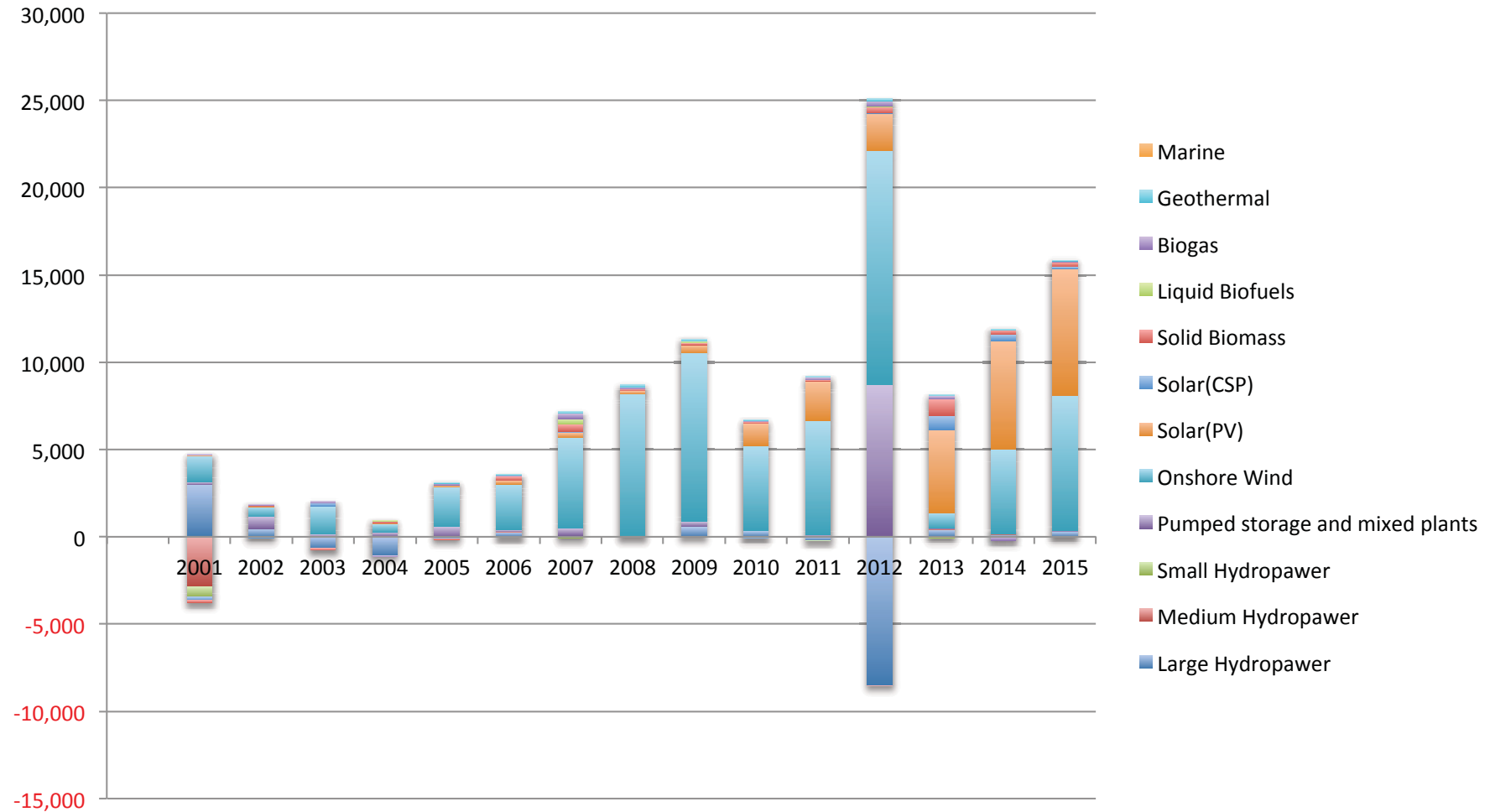
Renewable installation capacity: US



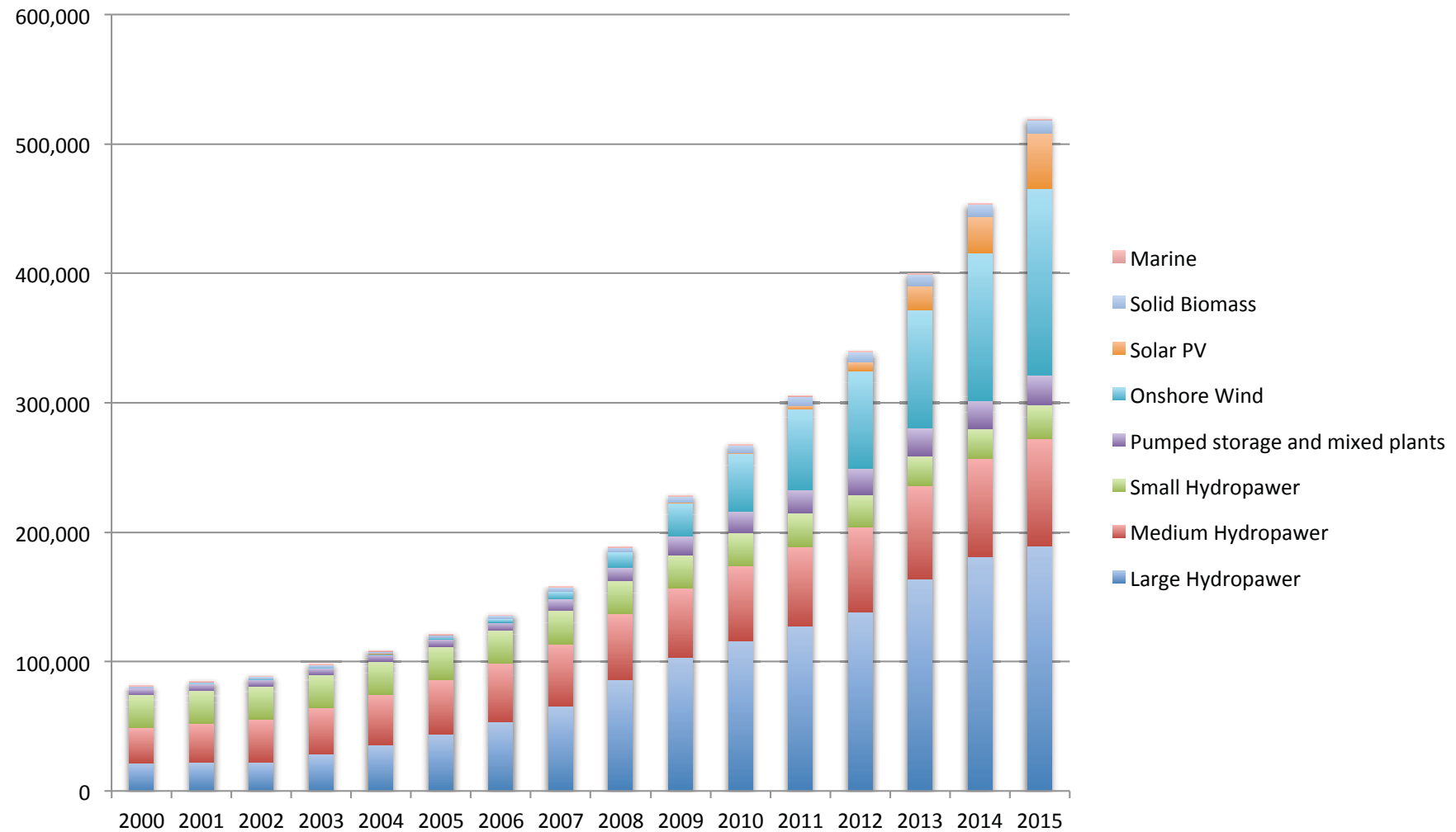
Renewable installation capacity: US



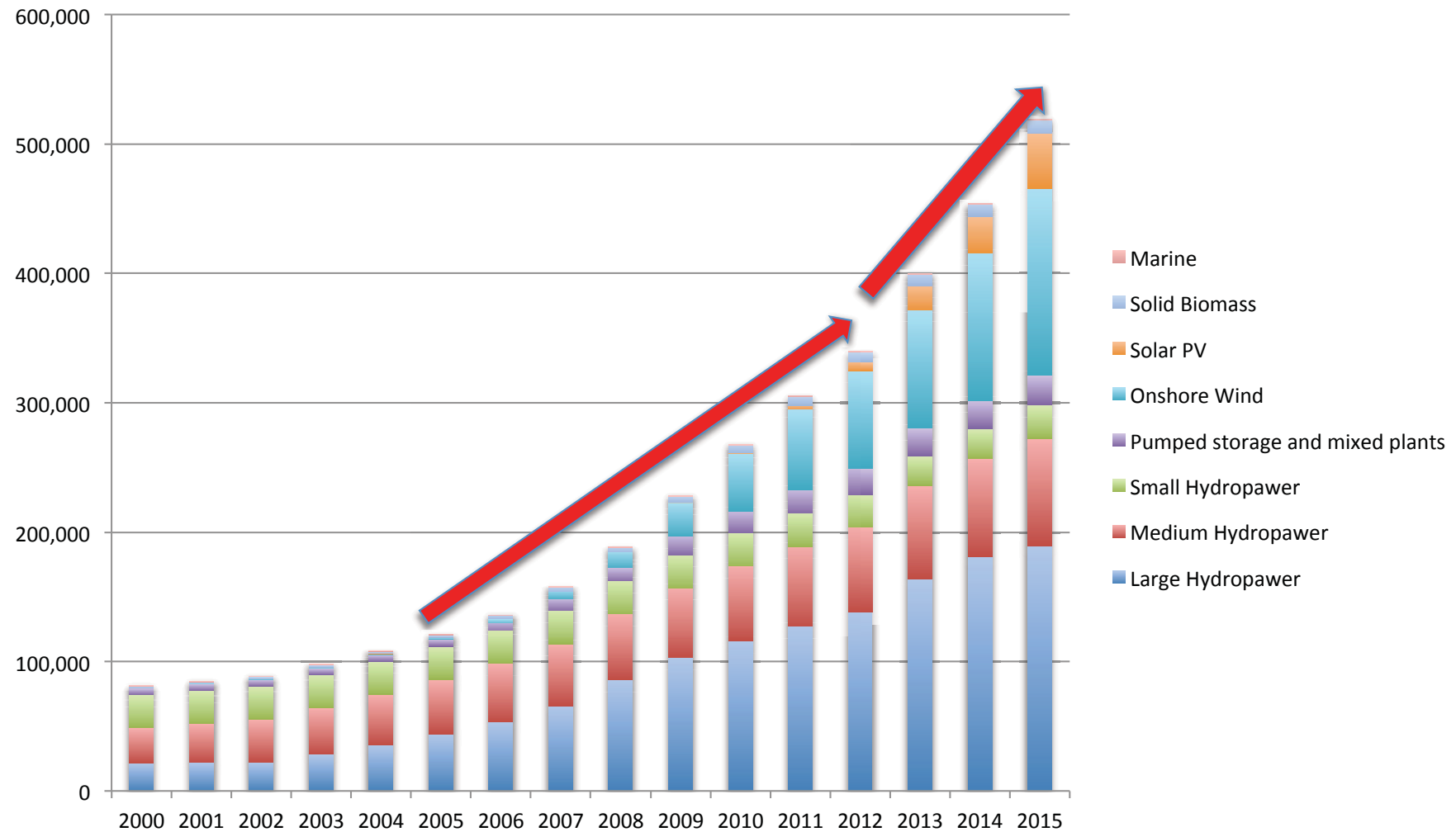
Additions of renewable installation capacity: US



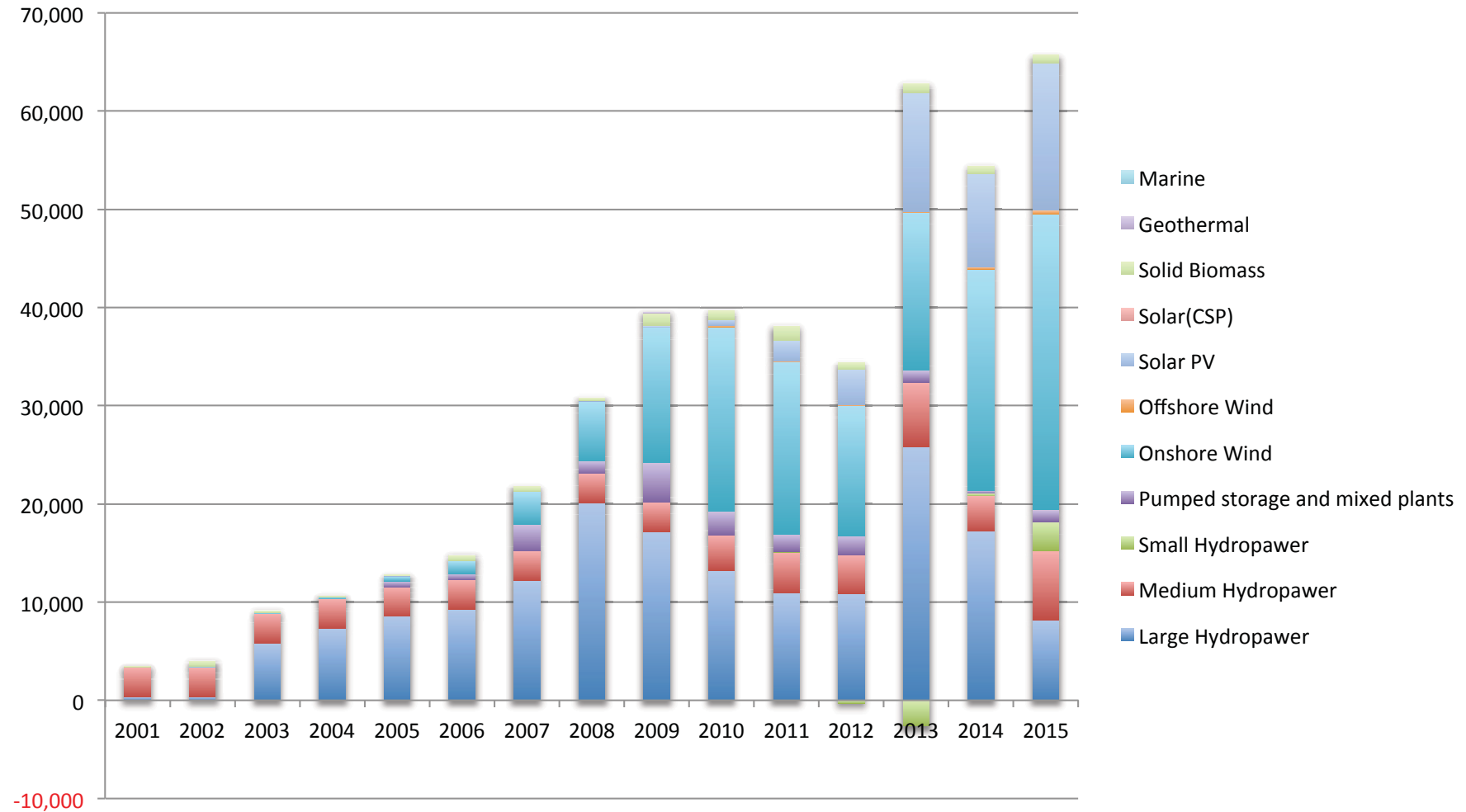
Renewable installation capacity: China



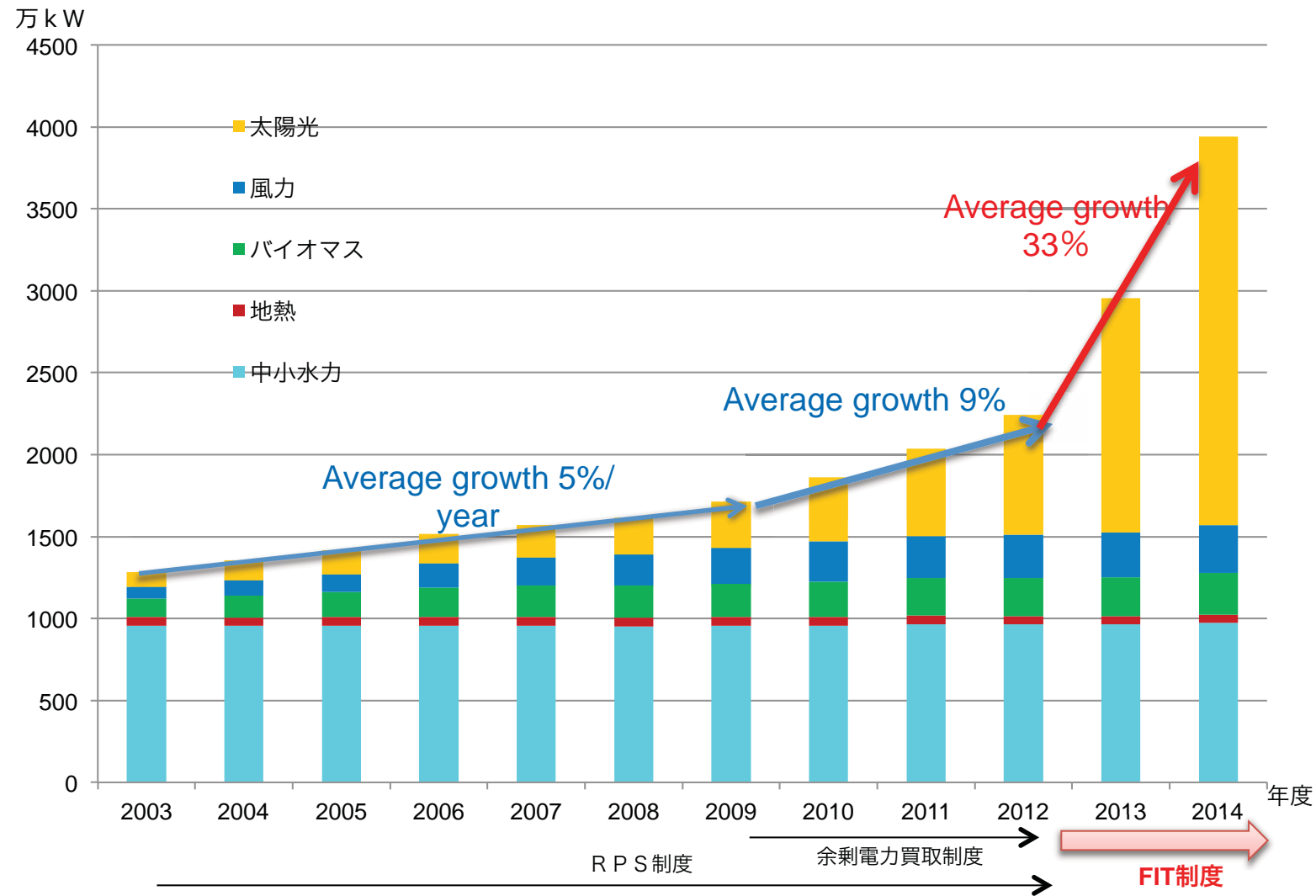
Renewable installation capacity: China



Additions of renewable installation capacity: China



Renewable installation capacity: Japan



(JPEA出荷統計、NEDOの風力発電設備実績統計、包蔵水力調査、地熱発電の現状と動向、RPS制度・固定価格買取制度認定実績等より資源エネルギー庁作成)