

# IRENA's Power Generation Cost Analysis and Geothermal

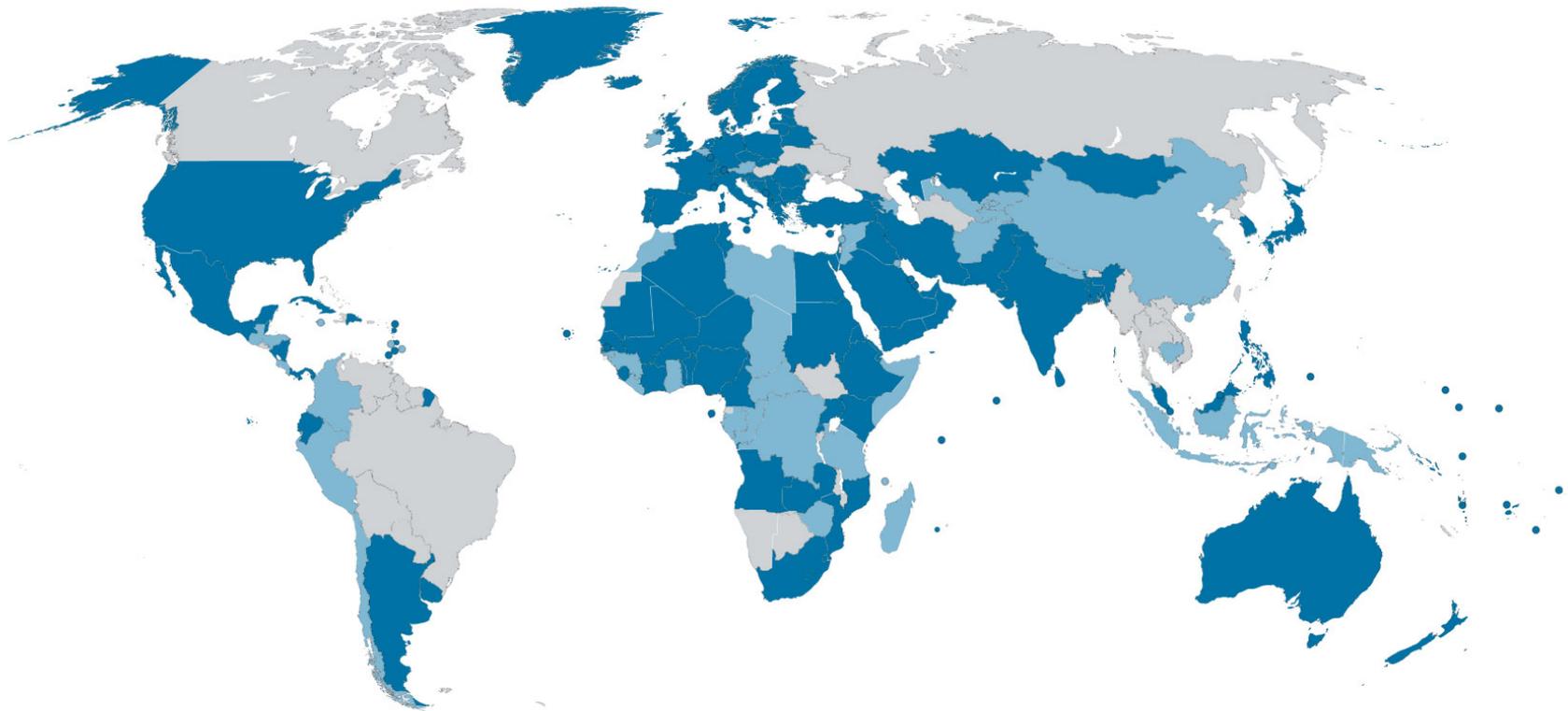
**Geothermal: Competing With Other Renewable And Non-Renewable  
Technologies Webinar, 19 November 2013**



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# About IRENA



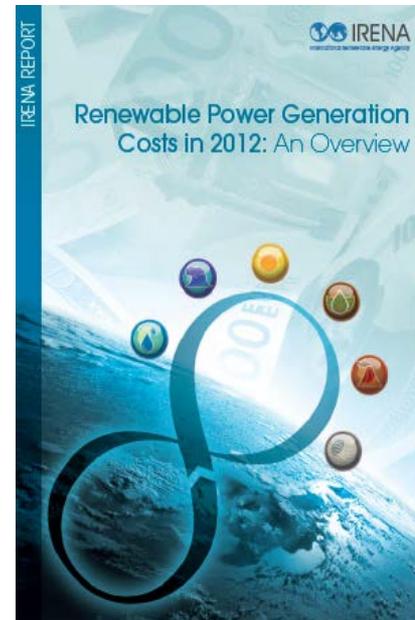
- Members of the Agency
- Signatories/States in Accession



- Renewable energy can meet policy goals for *secure, reliable and affordable* energy and *access*.
- Lack of objective and up-to-date data is a barrier
- Decision making based on: outdated numbers, opinion
- IRENA to strive to become THE source for cost data
- Goals:
  - Assist government decision-making, allow more ambitious policies
  - Fill a significant information gap
- Coverage:
  - Power generation (June 2012 and January 2013)
  - Road Transport (July 2013)
  - Stationary applications (2014)

# 2

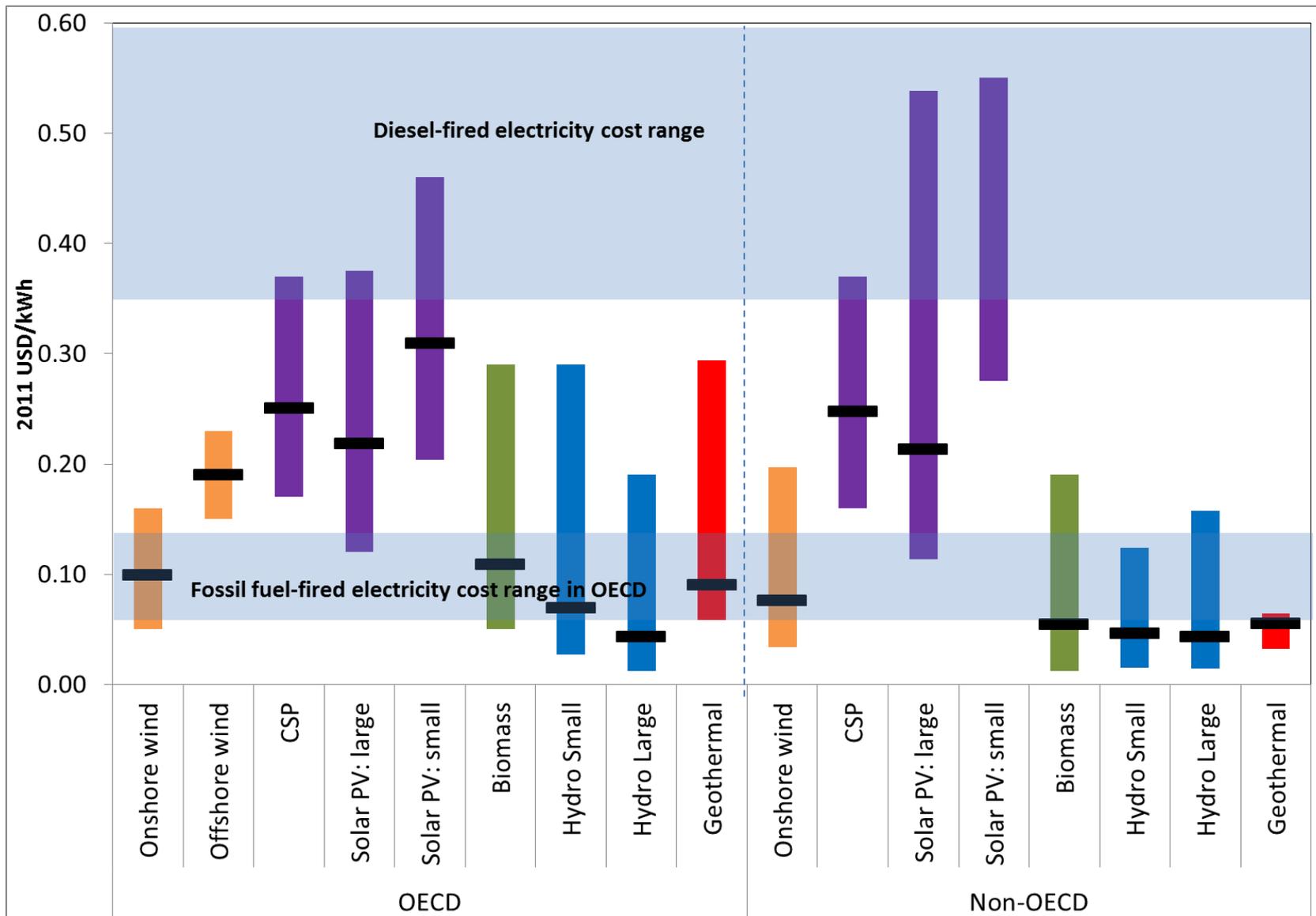
# RENEWABLE POWER GENERATION 2012



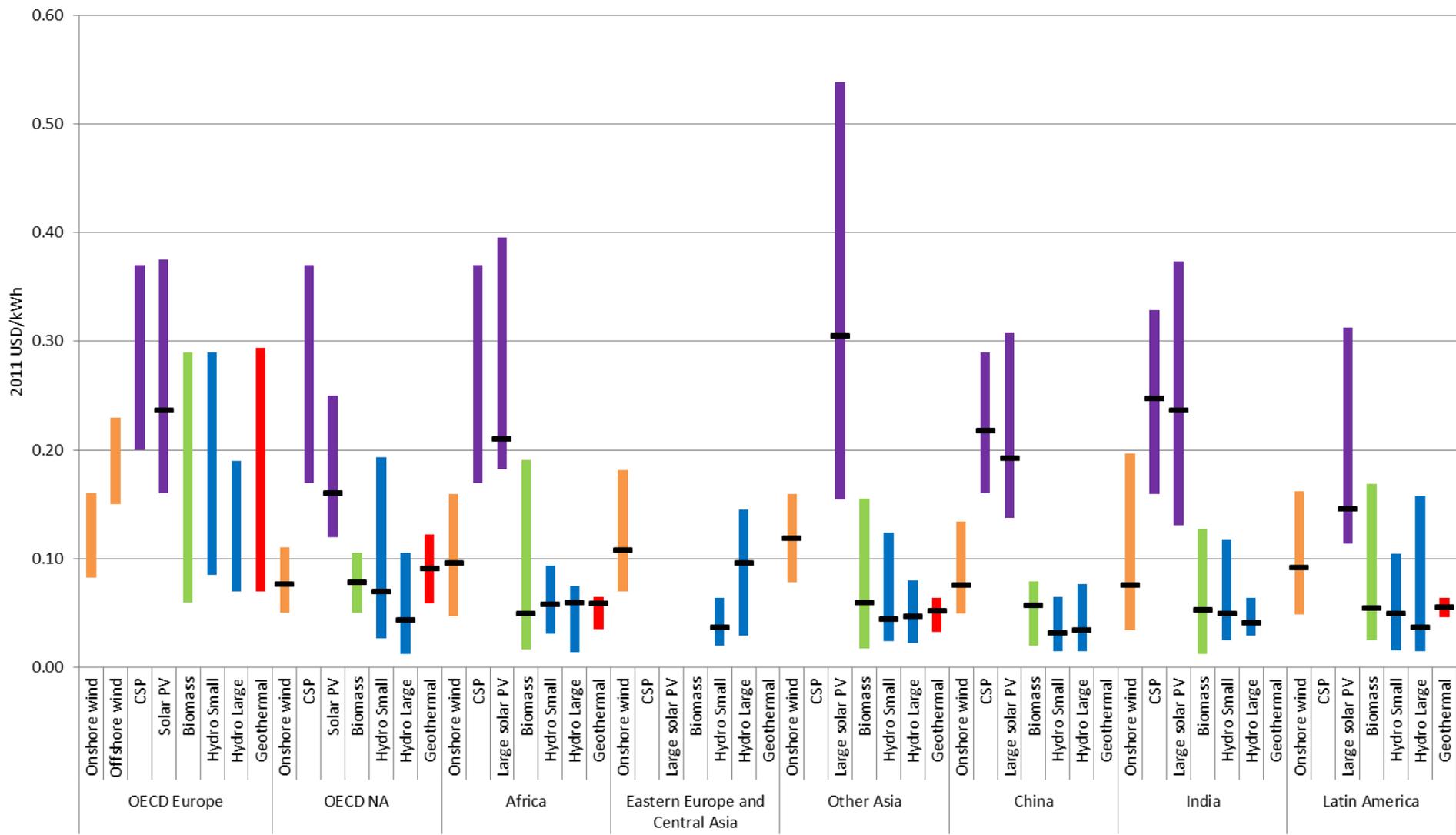
# Key findings

- Renewables now THE economic solution off-grid and for mini-grids, increasingly competitive for grid supply
- A shift in policy focus will need to come
- Dramatic price reductions for Solar PV. Onshore wind competitive at best sites, CSP has great potential. Hydropower, geothermal and biomass more mature
- Equipment cost declines and technology improvements  
→ LCOEs are falling
- Data collection poses challenges
- Why isn't data systematically collected from support policies?

# LCOE ranges and averages

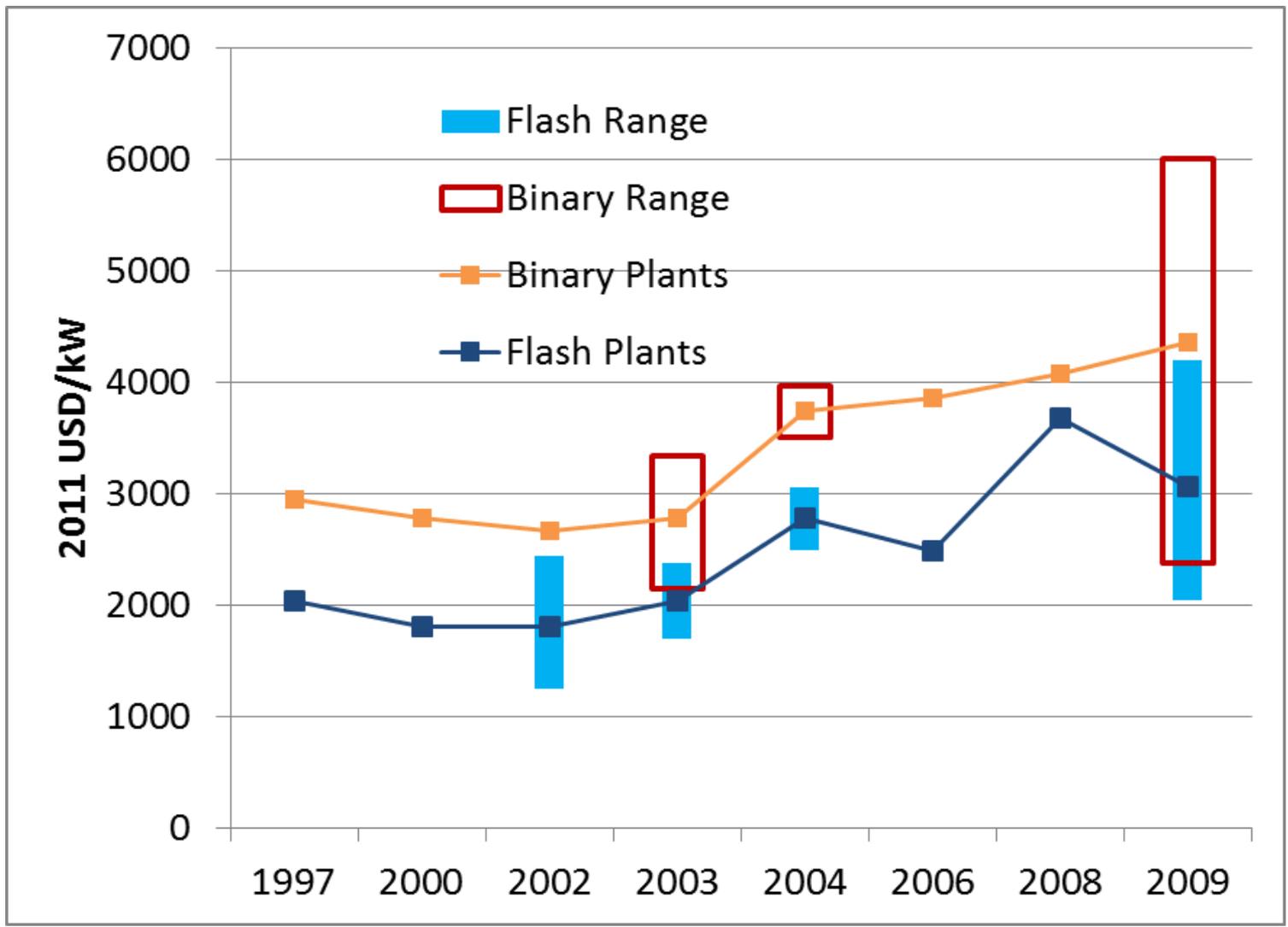


# Levelised cost of electricity by country/region



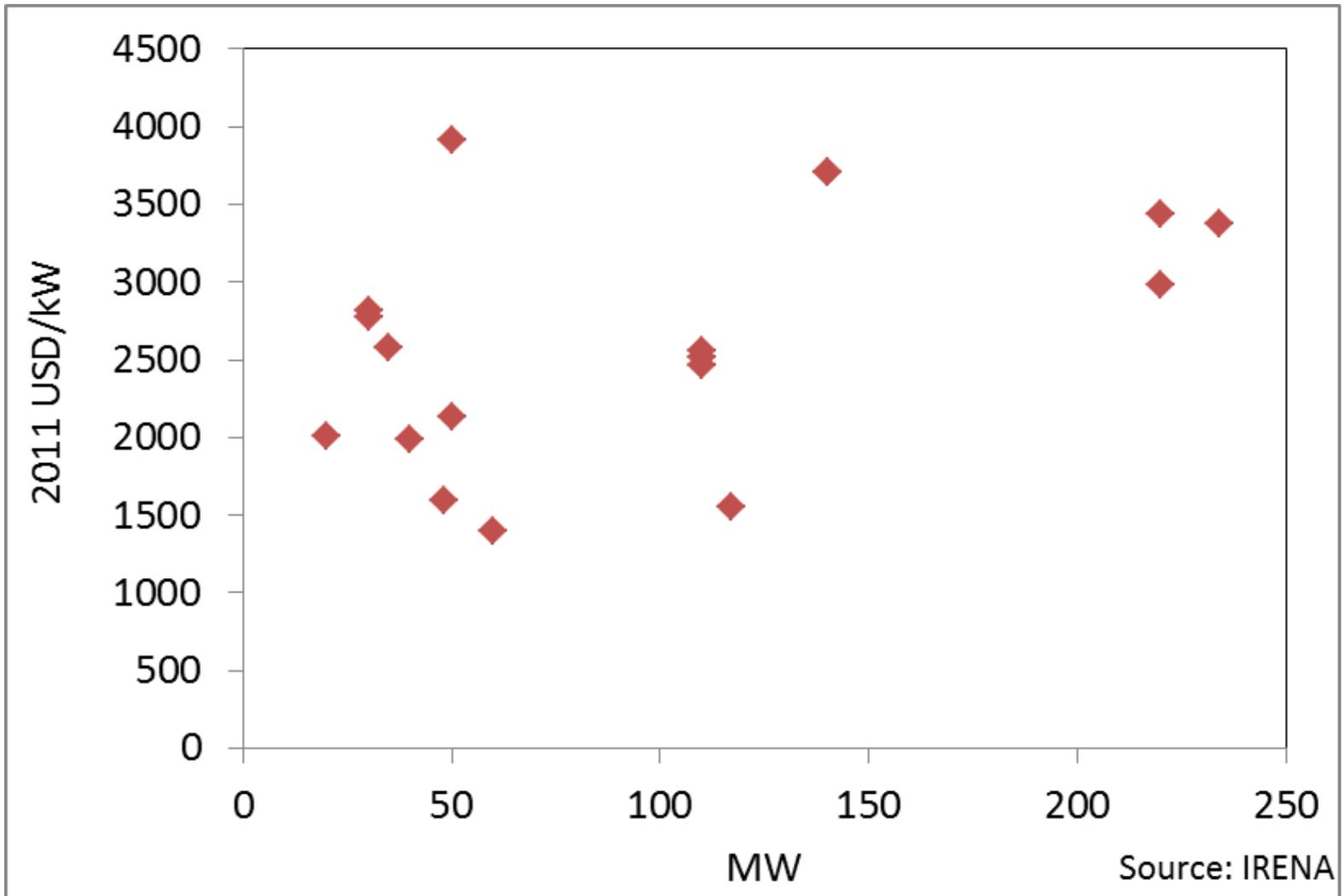
Note: assumes a 10% cost of capital

# Geothermal: Installed costs have been rising



Source: IPCC, 2011

# Total installed costs of geothermal projects in Chile, Indonesia, Kenya, Mexico and the Philippines



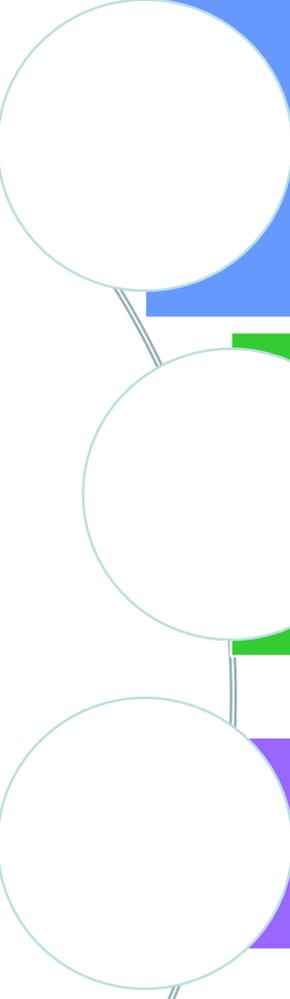
*Ex ante* data, but what about *ex post*?

- Well defined resources of high quality can deliver highly competitive electricity
- Capital costs have been rising with commodity prices and engineering costs
- Risk profile is very different to other renewable technologies
- Many factors at play in determining the costs of a project
- Dedicated policy framework is essential to ensuring geothermal projects not disadvantaged

# **3 PLANS FOR THE IRENA RENEWABLE COSTING ALLIANCE**

# Rationale and Plans

- 
- Analysis to date has been based on low hanging fruit
  - Engage with business: The Alliance will work at a technical level on data and its availability
  - Alliance members share, confidentially, their data on real world project costs
  - Entirely voluntary, we work together for mutual benefit
  - Establishment period now, official launch at Assembly
  - Goals:
    - more data, better data, a greater focus on analysis of data



## Member countries:

- Steering group for costing analysis focus
- One workshop a year
- Must nominate institution to deliver data
- Quarterly newsletter

## Alliance Members:

- Provide data, confidentially
- One workshop a year
- Ability to query the database in detail
- Quarterly newsletter

## Observers:

- Quarterly newsletter
- Mailing list for new publications/analysis



**Renewables are increasingly competitive, but more needs to be done to fulfill their potential...**

**IRENA is part of the solution**

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