

Regional Workshop on Overcoming Critical Bottlenecks to Accelerate Renewable Energy Deployment in ASEAN + 6 Countries



Peter Storey
Bangkok, 15th June 2016

AGENDA

Financing – Trends, Challenges & Opportunities

- ❑ Setting the Scene: RE Investment Trends / Enabling Environment Analysis
Peter Storey / PFAN
- ❑ Presentation of IRENA's work on Financing & Enabling Environments in ASEAN
Aleksi Lumijarvi / IRENA
- ❑ Introduction to USAID's Climate Change & Clean Energy Activities in the region
Sithisakdi Apichatthanapath (Seng) / USAID
- ❑ Experiences of the 5P project in engaging private sector partners and de-risking rural RE projects in Nepal – Erick Ratajczak / UN ESCAP
- ❑ How can target funding to get the biggest impact (in relation to INDCs)?
Gustaf Godenhielm / Thai Biogas Energy Co.
- ❑ Panel discussion – Q&A from general participants

CONTENTS

- ❑ Brief Introduction to PFAN

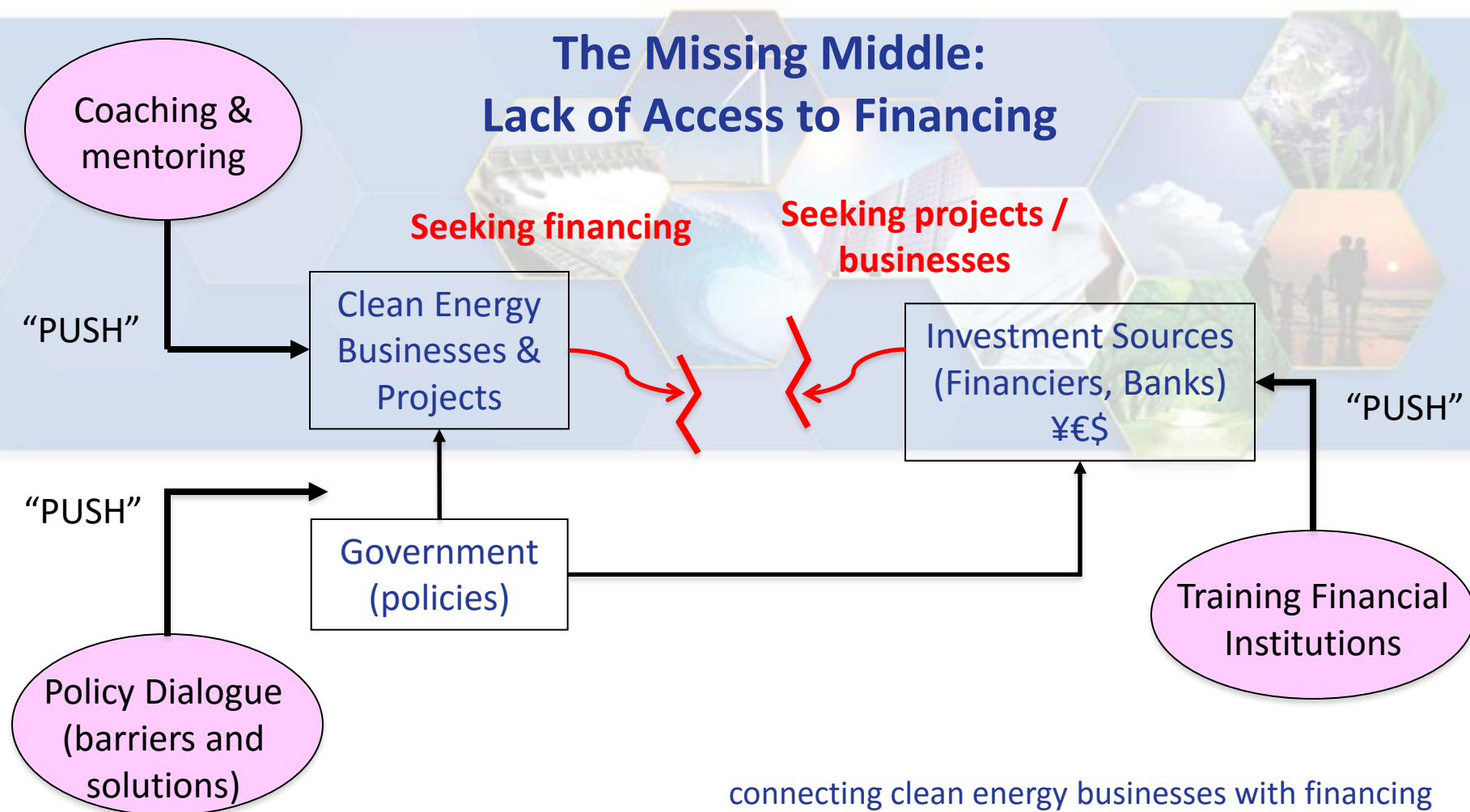
- ❑ Global RE Investment Activity Data

- ❑ Analysis of Regional EE

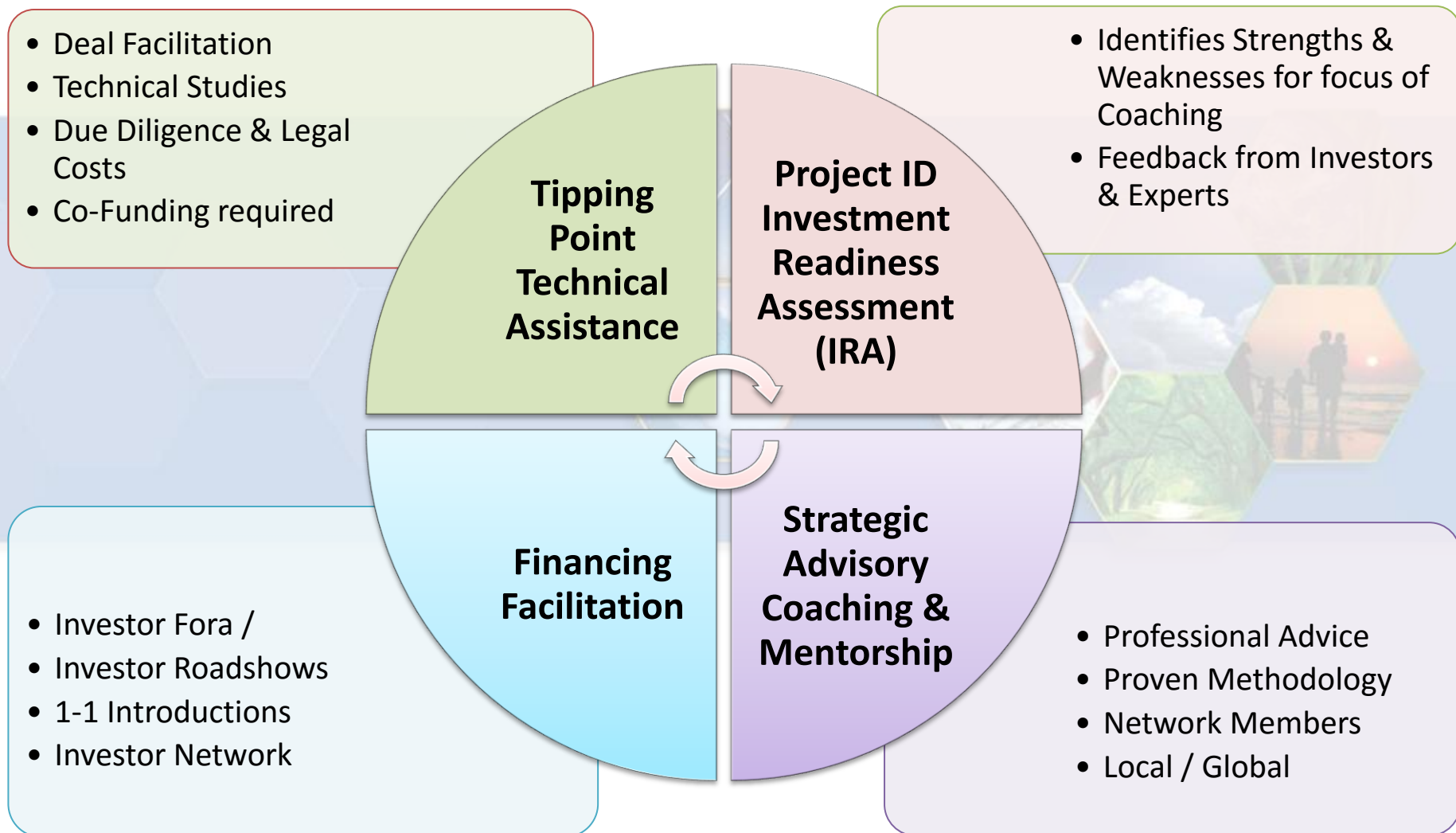
- ❑ Issues

CTI PFAN – Rationale

How a multi-pronged approach can scale up clean energy deployment

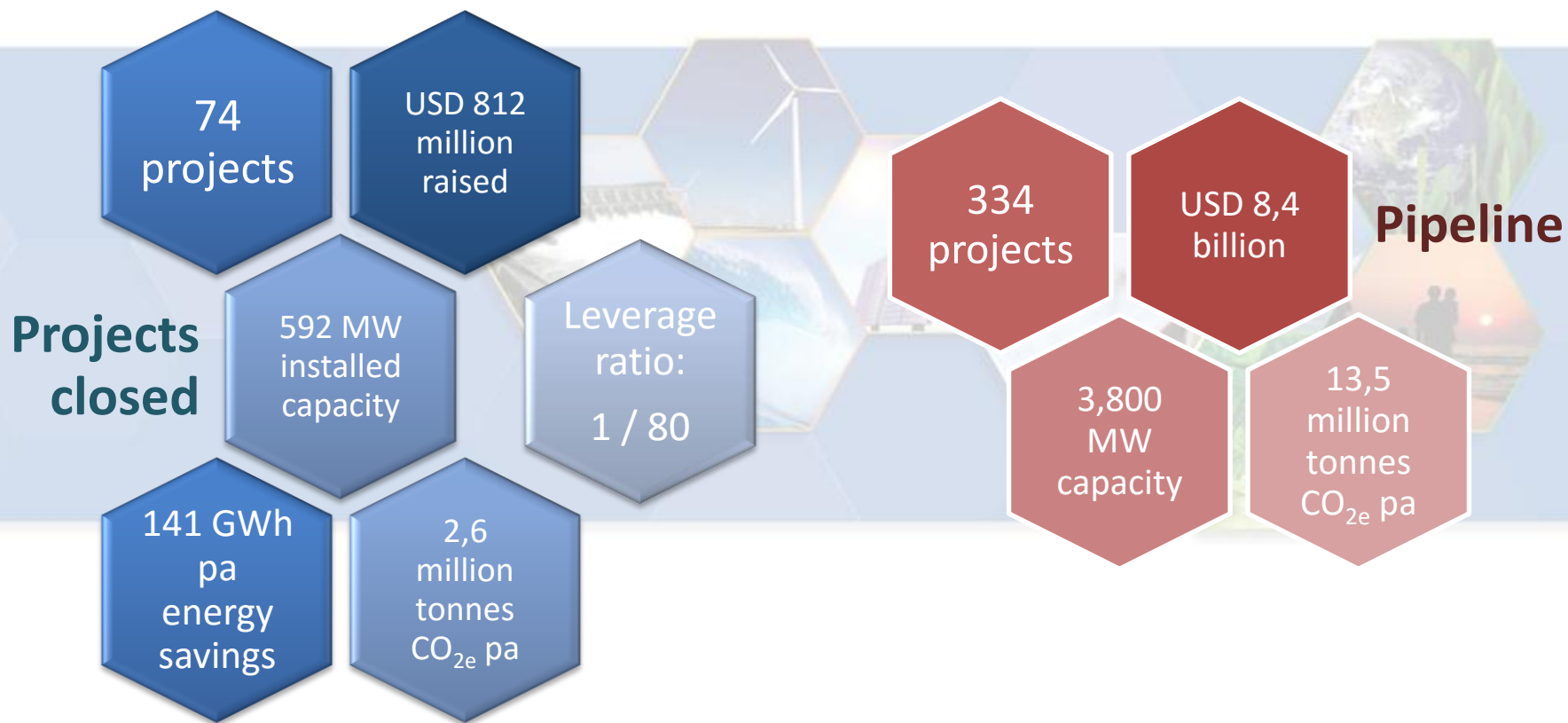


PFAN Services



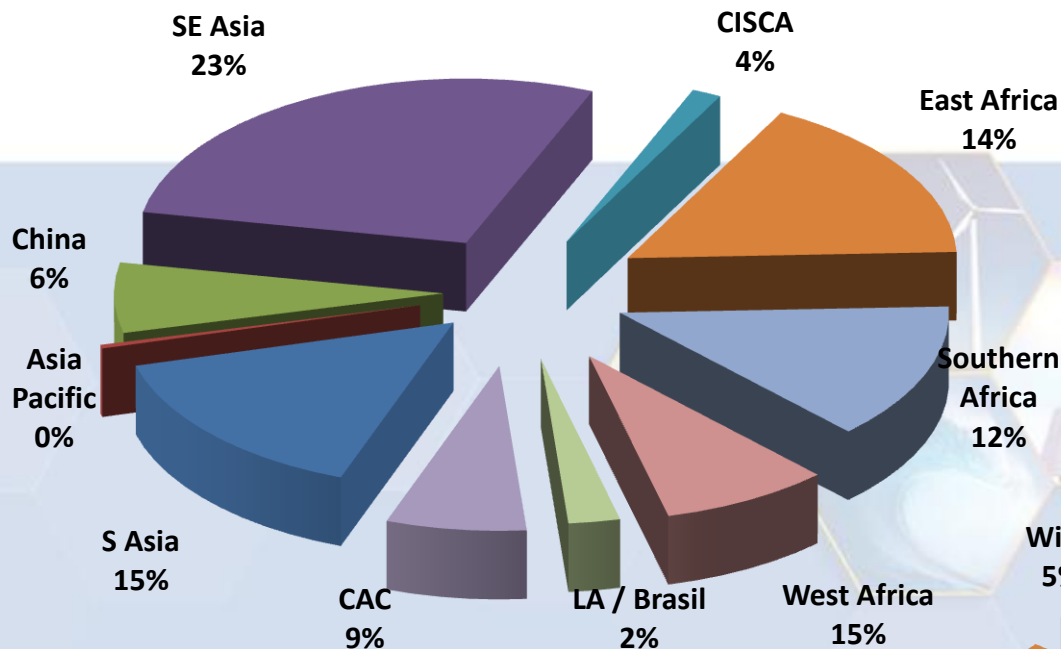
connecting clean energy businesses with financing

PFAN Track Record

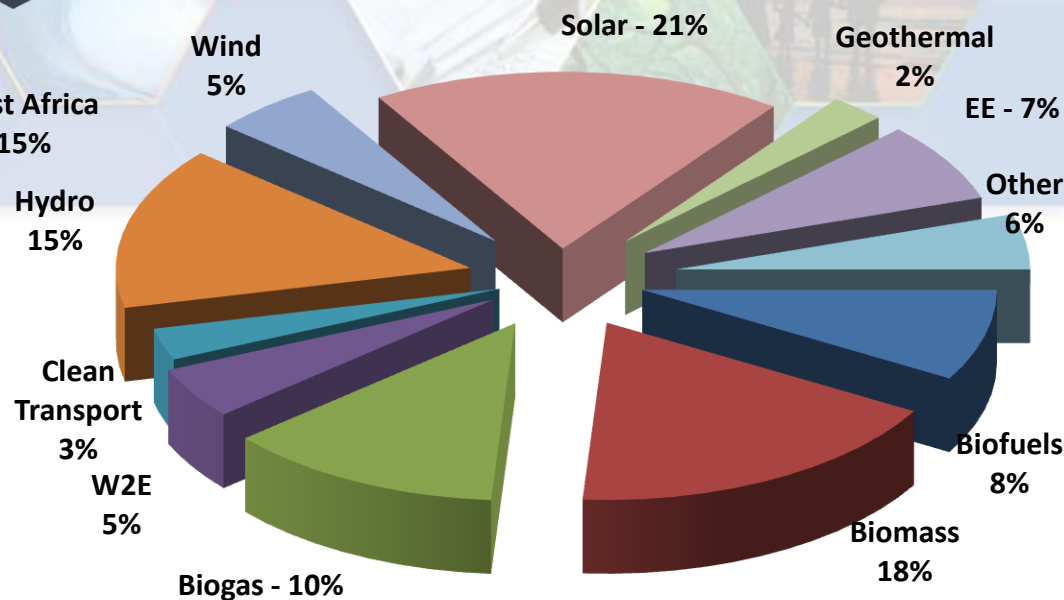


Pipeline Analysis at 31.03.2016

By Region

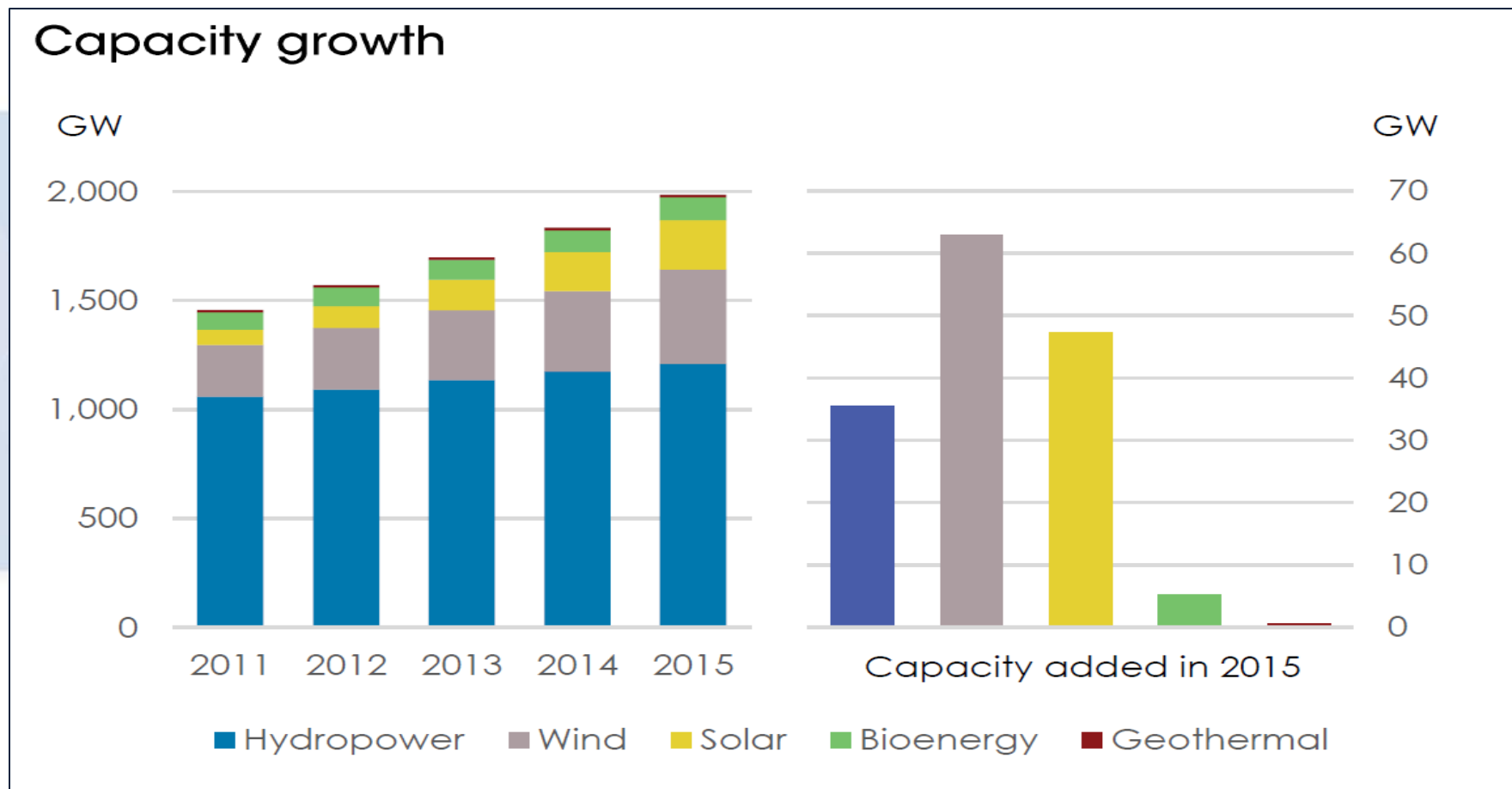


By Technology



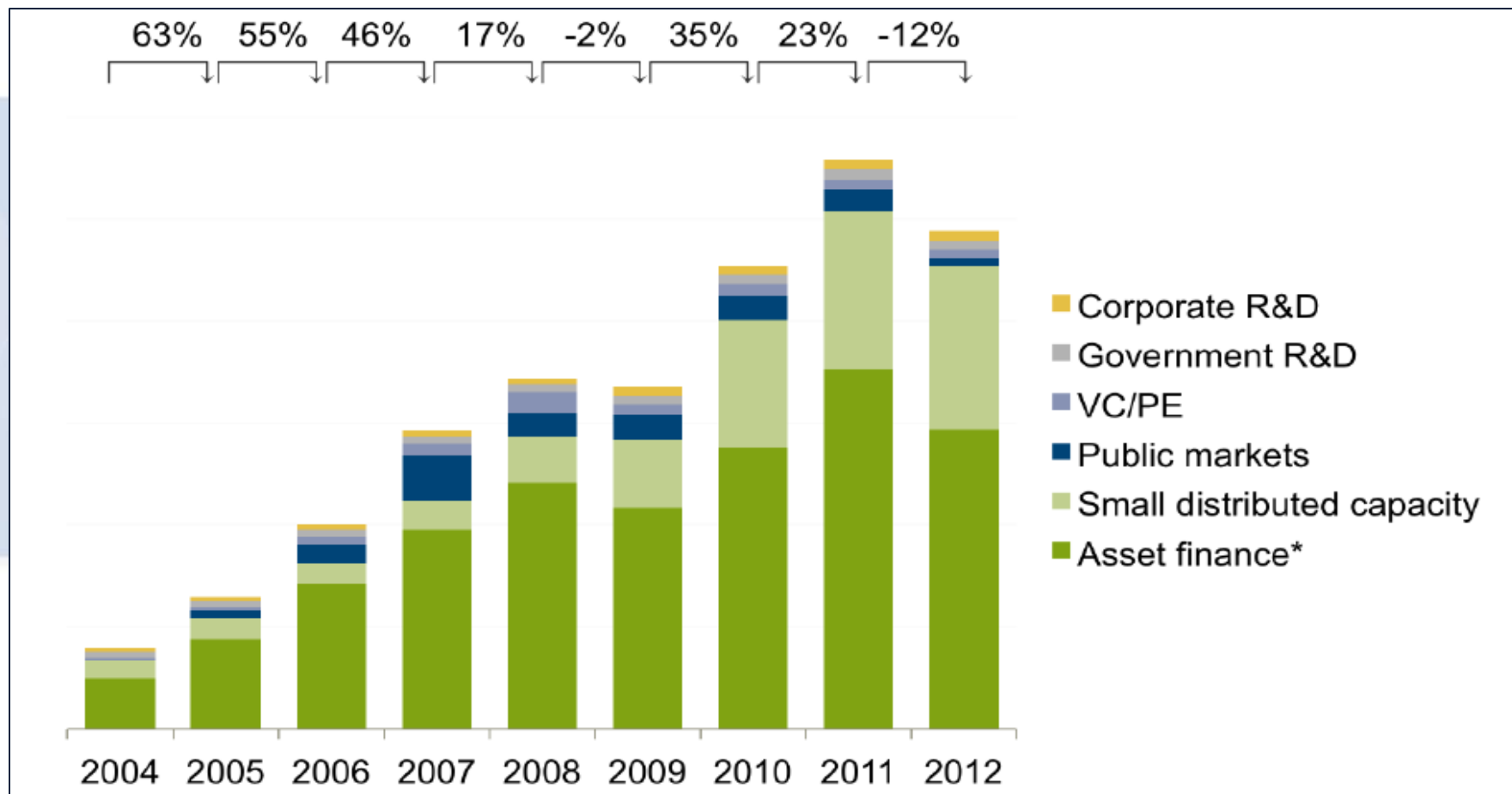
connecting clean energy businesses with financing

RE - CAPACITY GROWTH



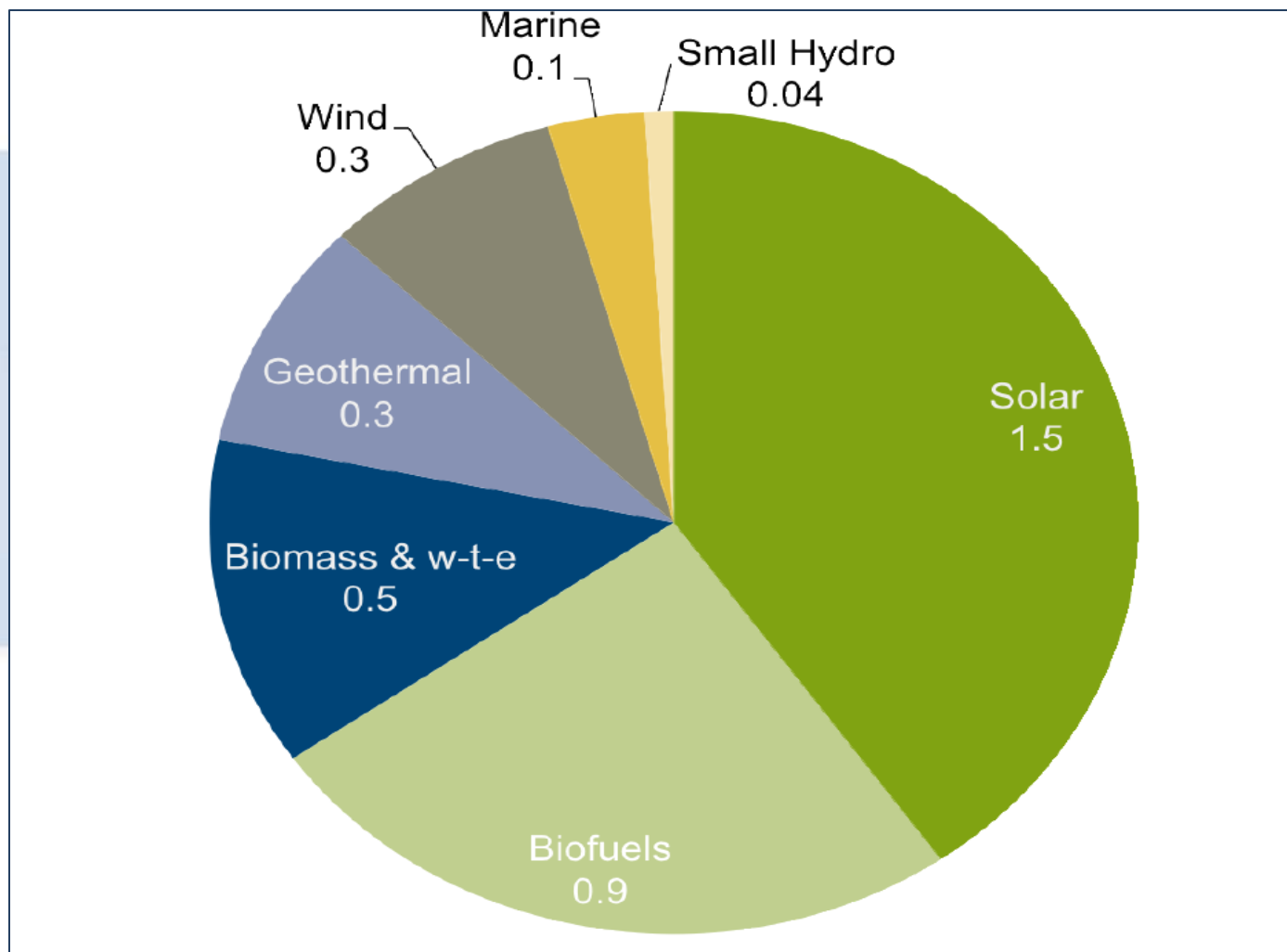
IRENA – RENEWABLE ENERGY CAPACITY HIGHLIGHTS 6TH APRIL 2016

INVESTMENT BY ASSET CLASS



UNEP – GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT - 2013

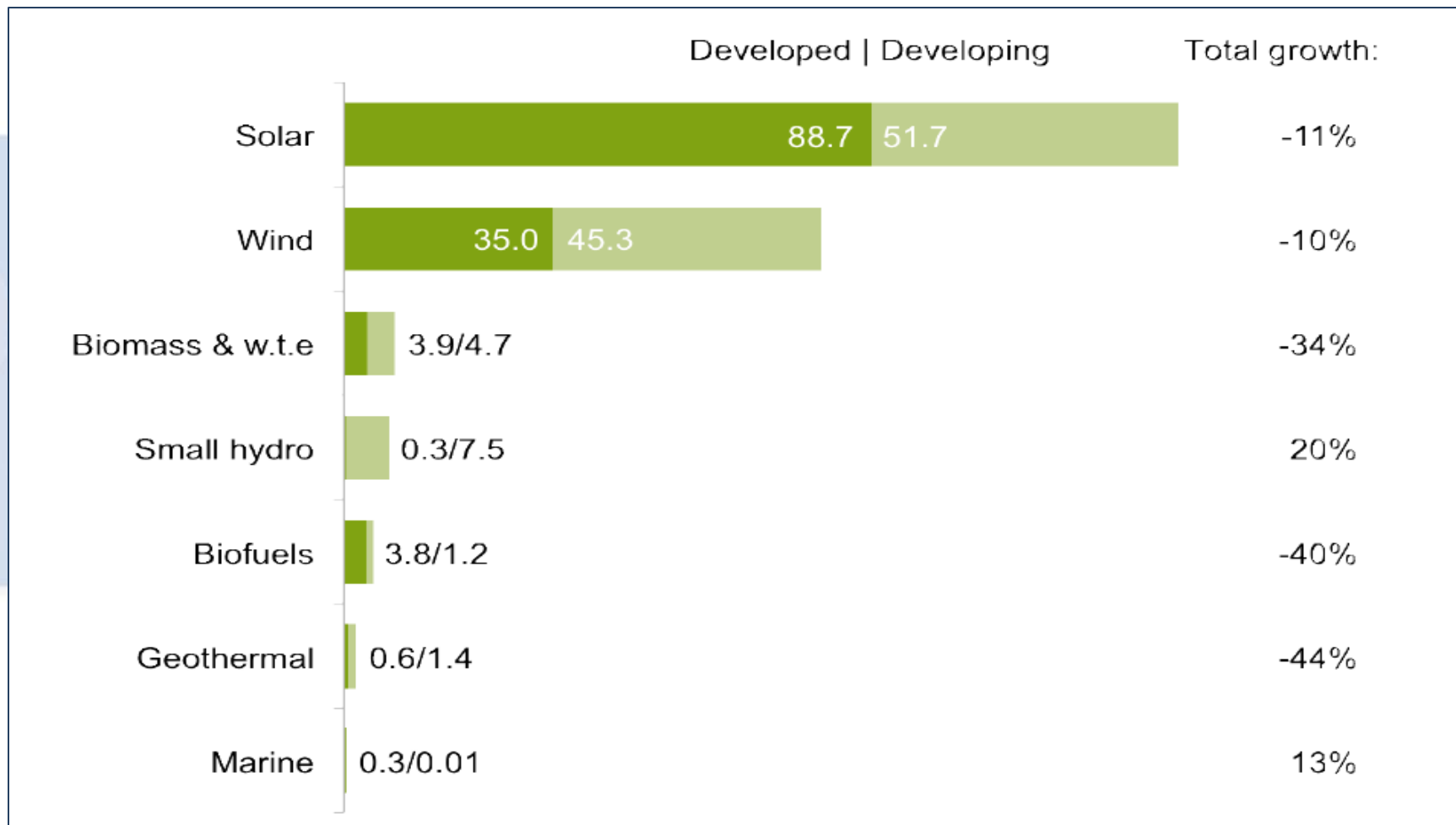
RE - VC / PE INVESTMENT BY SECTOR (2012)



UNEP – GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT - 2013

connecting clean energy businesses with financing

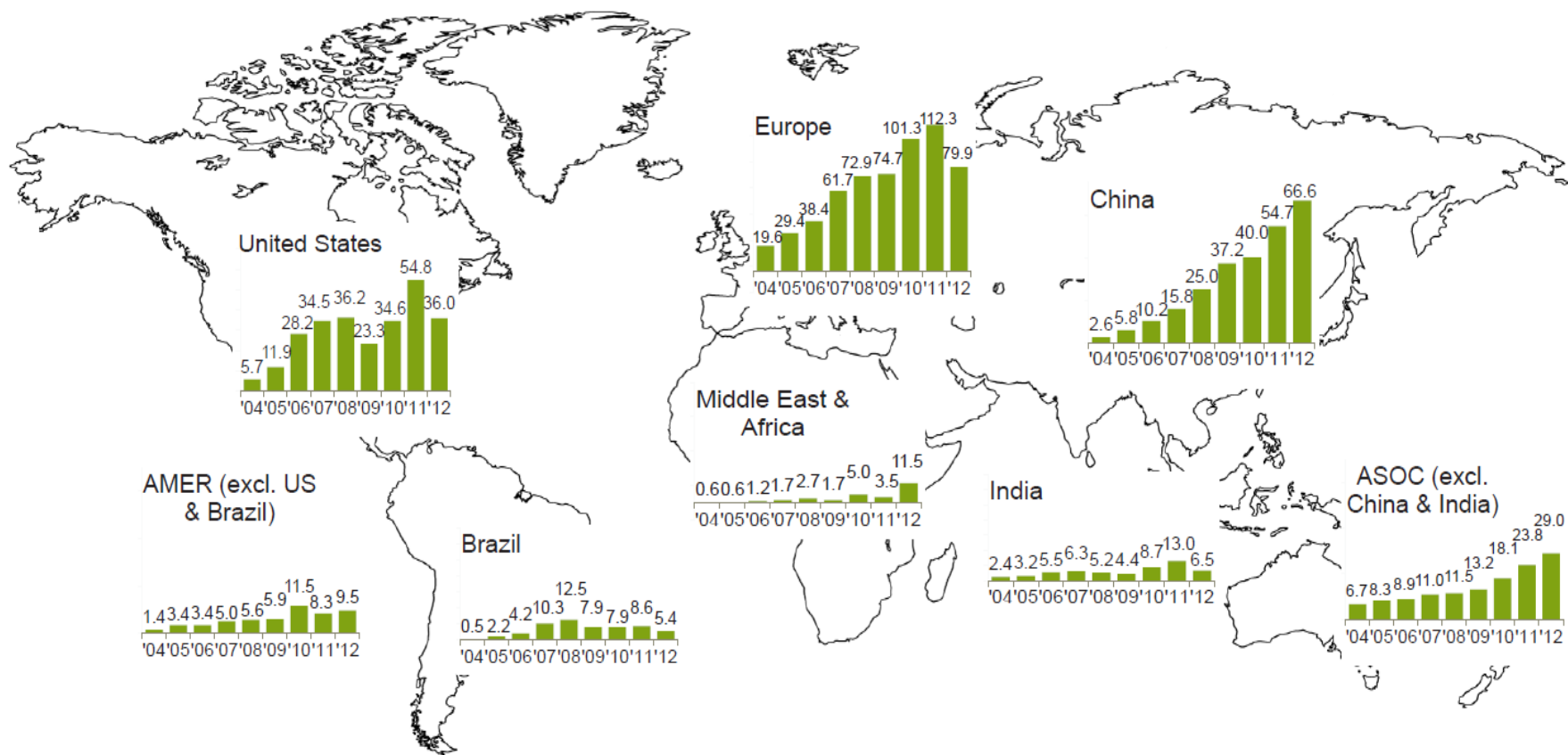
RE - BY ECONOMY FOR 2012



UNEP – GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT - 2013

connecting clean energy businesses with financing

RE - GROWTH BY REGION 2004 - 2012



Regional Enabling Environment Overview

Countries in South and Southeast Asia have a diverse mix of clean energy targets, renewable energy policies and fiscal and financial incentives to encourage clean energy development.

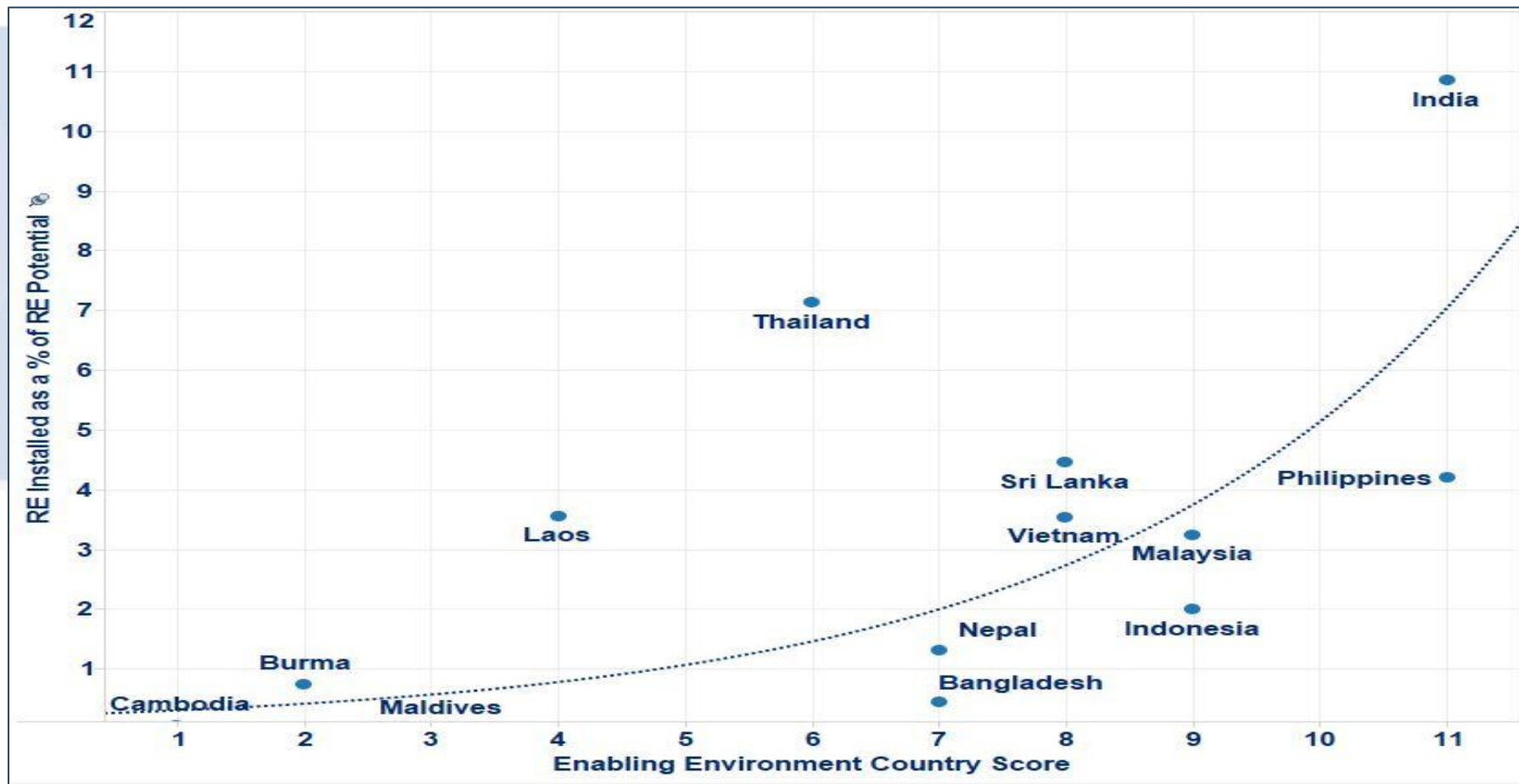
| | Country | Country Score | Regulatory | | | Fiscal and Financial Incentives | | | | | | | |
|-----------------------|-------------|---------------|-------------------------|----------------------|-------------------------|---------------------------------|----------------------|-----------------|-------------------|------------------------|--------------------|-------------------|---------------|
| | | | Renewable Energy Policy | Renewable Energy Law | Renewable Energy Target | RE Purchase Obligation | Tradable Instruments | Feed-in Tariffs | Capital Subsidies | Production Tax Credits | Income Tax Holiday | Customs Exemption | VAT Exemption |
| ASEAN Countries | Cambodia | 1 | • | | | | | | | | | | |
| | Indonesia | 9 | • | • | • | • | | • | • | | • | • | • |
| | Laos | 4 | • | | • | | | | | | • | • | |
| | Malaysia | 9 | • | • | • | • | | • | • | | • | • | • |
| | Philippines | 11 | • | • | • | • | • | • | • | • | • | • | • |
| | Thailand | 6 | • | • | • | | | • | | | • | • | |
| | Vietnam | 7 | • | • | • | | • | • | • | | • | • | |
| | Burma | 2 | • | | • | | | | | | | | |
| South Asian Countries | Bangladesh | 7 | • | • | • | | | | • | | • | • | • |
| | India | 11 | • | • | • | • | • | • | • | • | • | • | • |
| | Maldives | 3 | • | | • | | | • | | | | | |
| | Nepal | 7 | • | • | • | | | | • | • | • | • | |
| | Sri Lanka | 8 | • | | • | • | | • | • | • | • | • | |

*Adapted from Deloitte Enabling Environment Score Methodology for USAID PFAN-ASIA

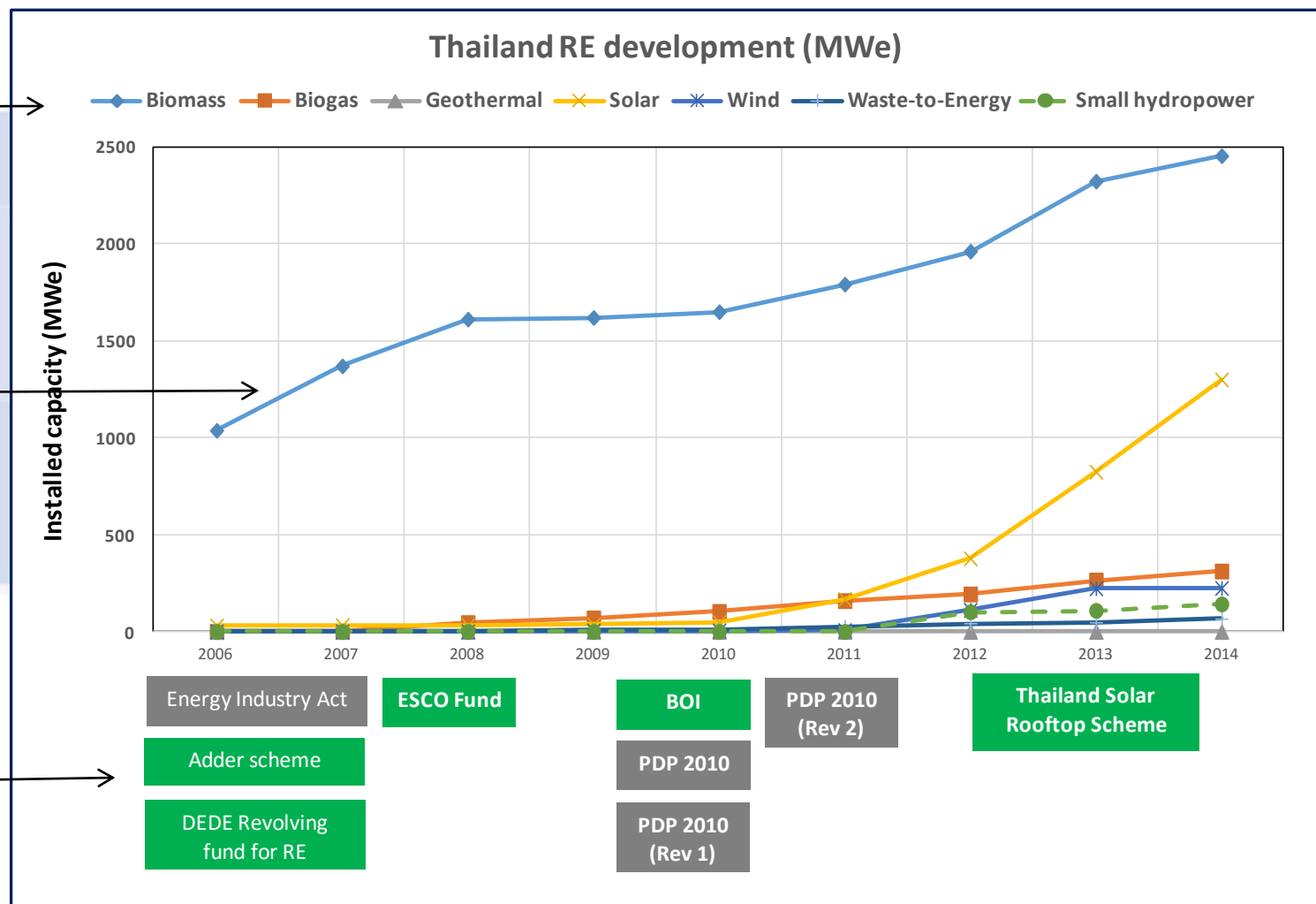
connecting clean energy businesses with financing

Enabling Environment Analysis

Preliminary analysis shows a strong correlation between the legal and regulatory enabling environment and a country's renewable energy installed capacity levels.



RE Policy vs RE Development (Thailand)



Summary of RE Policy Impacts on RE Development

| | No. of policy instruments used | RE development (MWe installed capacity) | Comments |
|-------------|--------------------------------|---|--|
| Brunei | 1 | 1 | Very early stage of RE policy implementation |
| Cambodia | 2 | 30.2 | Very few policies implemented |
| Indonesia | 5 | 2835.6 | A mature range of policies covering a variety of technologies. Main focuses are biomass and geothermal due to availability.. |
| Laos | 2 | 80.9 | Few RE specific policies implemented. Focus on hydro . |
| Malaysia | 6 | 1276 | Key policies have only recently been introduced (2011). Since 2011 RE implementation seems to be on the up. |
| Myanmar | 0 | 34 | Very few policies implemented |
| Philippines | 6 | 2380 | The largest proportion of RE is from old geothermal plants (1980s). Since the FiT introduction in 2010, RE implementation seems to have been stimulated. |
| Singapore | 5 | 289.8 | Mature range of policies with a focus on WTE and PV; however the lack of an attractive FiT seems to have hindered RE implementation |
| Thailand | 6 | 4493.5 | A mature range of policies covering a variety of technologies |
| Vietnam | 6 | 2514.1 | Hydro and wind power focused; policies for implementing other RE are recently promulgated |

Common Barriers to RE Development in ASEAN

- ☐ RE Technology Cost
- ☐ Lack of financing
- ☐ Lack of technical capability
- ☐ Complicated permitting procedures
- ☐ Lack of institutional coordination
- ☐ Low Oil Price
- ☐ Grid stability / capacity



Common Success Factors (ASEAN)

- ❑ Experienced and competent consultants to support the development of RE projects
- ❑ Appropriate, attractive tariffs (+ possible additional incomes)
- ❑ Abundance of resources / security of fuel supply
- ❑ Government commitment (targets)
- ❑ Community support and participation

Non Policy Factors

Non-policy factors have also been affecting the successful implementation of RE projects.

- Availability and easy access to financing sources
- Availability of updated data on RE resources and other RE-related information (technology, economics, finance, etc.)
- RE market scale
- Capability of local stakeholders (developers, consultants, manufacturers, EPC contractors, etc.)

Issues

- ❑ Different Countries require different levels and sorts of EE intervention
- ❑ Is it Financing or Project Supply that is the bottleneck?
- ❑ Money is top down – project ID & development is bottom up. How do we reconcile this conundrum?
- ❑ Scale – is bundling the answer?
- ❑ Lack of Developer Equity
- ❑ Liquidity (Lack of attractive exits / no secondary market)
- ❑ How do we operationalize INDCs to help meet targets and specifically how do we involve private sector and especially SME's in this process?

AGENDA

Financing – Trends, Challenges & Opportunities

- ❑ Setting the Scene: RE Investment Trends / Enabling Environment Analysis
Peter Storey / PFAN
- ❑ Presentation of IRENA's work on Financing & Enabling Environments in ASEAN
Aleksi Lumijarvi / IRENA
- ❑ Introduction to USAID's Climate Change & Clean Energy Activities in the region
Sithisakdi Apichatthanapath (Seng) / USAID
- ❑ Experiences of the 5P project in engaging private sector partners and de-risking rural RE projects in Nepal – Erick Ratajczak / UN ESCAP
- ❑ How can target funding to get the biggest impact (in relation to INDCs)?
Gustaf Godenhielm / Thai Biogas Energy Co.
- ❑ Panel discussion – Q&A from general participants