South Africa Renewables

July 2011

Citi's Deep Alternative Energy Expertise

Citi has developed industry leading global Alternative Energy capabilities with a broad range and depth of expertise and execution capability.

Breadth of Citi Alternative Energy Expertise

- Top M&A advisory practice
  - Experience across technologies
  - Global team with cross-border expertise
  - Advised on largest US wind M&A transaction
- Premier equity distribution platform
  - Private placements
  - Initial public offerings
  - Follow-ons
  - Convertibles
- Established project financing franchise
  - Greenfield and brownfield situations
  - Portfolio or single asset transactions
  - Acquisition financings and recapitalizations
  - Lead arranger of largest US wind and solar project financing
- Tax equity investment capabilities
  - Tax equity partnerships
  - Leveraged leases
- Strong commodities hedging team

Global Presence

Notable Transactions

Ongoing	2011	2011	2011	2011	2010
BrightSource	KiOR	Solar Trust of America	Iberdrola	gevo	Caithness / GE
US	US	US	Spain	US	US
$250mm IPO	IPO	$2.1bn DOE Loan Guarantee for US Solar Thermal Project	~$3.5 billion Acquisition of IBR's 20% remaining float	$107mm IPO	$1.4 bn DOE Loan Guarantee Advisory
Joint Bookrunner	Co-Manager	Lead Advisor	Advisor to Iberdrola	Joint Bookrunner	Lead Advisor / Arranger

Unmatched Global Execution Leadership in Alternative Energy

Citi has been a consistent leader in alternative energy transactions across sectors, geographies and products.

Ongoing
SolarTrust
US
Sale of majority stake in Blythe Solar Thermal Project
Lead Advisor

Ongoing
BrightSource
US
$250mm
IPO
Joint Bookrunner

Ongoing
PetroAlgae
US
IPO
Joint Bookrunner

2011
KiOR
US
IPO
Co-Manager

2011
SolarTrust
US
$2.1bn DOE Loan Guarantee for US Solar Thermal Project
Lead Advisor

2011
Iberdrola
Spain
~$3.5 billion
Acquisition of IBR's 20% remaining float
Advisor to Iberdrola

2011
gevo
US
$107mm
IPO
Joint Bookrunner

2010
Caithness / GE
US
$1.4 bn
DOE Loan Guarantee
Advisory
Lead Advisor / Arranger

2010
Goldwind
Hong Kong
$920mm
IPO
Joint Bookrunner

2010
Q.Cells
Germany
Rights Issue / Convertible / Tender Offer
Advisor to Q.Cells

2010
Terra-Gen Power, LLC
US
$1.2 bn
Alta Wind Holdings Project Financing
Lead Placement Agent / Underwriter

2010
SunPower
US
$250 million
Convertible Bond Offering
Bookrunner

2009
Geysir Green Energy
Iceland
Restructuring of geothermal portfolio
Advisor to Geysir Green Energy

2009
LDK
US
$116 mm
ADR Equity Offering
Joint Bookrunner

2009
ArcLight
Terra-Gen Power, LLC
Sale of up to 40% of Terra-Gen to GIP
Sole Advisor to ArcLight

2009
Terra-Gen Power, LLC
US
$240 mm
HoldCo Refinancing
Joint Lead Arranger

2009
Solar Millennium and MAN Ferrostaal
Germany / US
Formation of Joint Venture
Advisor to Solar Millenium

2009
Suzlon
India
$110 mm & $47 mm Accelerated Equity Offerings
Sole Bookrunner

2009
EDF energies nouvelles
Italy
€63 mm
Acquisition of 50% in Greentech's Monte Grighine wind project
Advisor to EDF EN

2009
AES
US
Financing of Armenia Mountain Wind Project
Lead Arranger

2009
Yingli Solar
US
$242 mm
ADR Equity Offering
Joint Bookrunner

2009
BEWAG
Germany
Sale of International Wind Power GmbH, CEE Wind Portfolio
Advisor to BEWAG

2009
Gamesa
Spain / US
Sale of North Allegheny Wind Project
Advisor to Gamesa

2009
Q.Cells
Germany
€250 mm
Senior Convertible
Bookrunner

2009
Q.Cells
Germany
€537m
Sale of REC stake
Advisor to Q.Cells

2008
ERI
US
$137 mm
IPO
Joint Bookrunner

2008
SMA
Germany
€362 mm
IPO
Joint Bookrunner

2008
Areva
Germany
€207mm
Sale of 30% stake in REpower to Suzlon
Advisor to Areva

2008
Noble Environmental Power
US
$741 mm
Wind Portfolio Project Financing
Lead Arranger

2008
edp Renováveis
Portugal
€1,800 mm
IPO
Joint Global Coordinator

2008
China
£235 mm
Sale of Honiton Energy
Advisor to Honiton

2008
Gamesa
Spain
€265 mm
Sale of Gamesa Solar unit
Advisor to Gamesa

2007
Suzlon
India
$500 mm
Follow-on Offering
Joint Bookrunner

2007
EFOY Energy for you
Germany
€89 mm
IPO
Sole Bookrunner

2007
Caithness
US
Not Disclosed
Sale of Renewable Generation Portfolio
Advisor to Caithness

2007
edp
US
$2,930 mm
Acquisition of Horizon Wind Energy
Advisor to EDP

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LTM Citi Africa Energy & Metals and Mining Credentials

Citi has been involved in numerous natural resources finance transactions in Africa, notably in the area of upstream commodity linked and Reserve Based Finance.

Selected Transactions

DANAGAS

Shari'a Compliant
RBLfor Dana Gas
Egyptian assets

Mandated Lead Arranger
US$600mn
Current

AFREN

Afren plc

Mandated Lead Arranger
US$ 450mn
4 years
2011

TULLOW

Tullow Oil plc
Jubilee Field

Senior Participant
US$ 3.0bn
4.75 years
2011

KOSMOS ENERGY

Kosmos Energy LLC
Jubilee Field

Mandated Lead Arranger
US$2.0bn
2011

PERENCO

Perenco SA

Mandated Lead Arranger
US$ 2.8bn
5 years
2010

resource generation

Resource Generation

Sole Lead Arranger
US$360mn
Current

AFRICAN BARRICK GOLD

ABG (Tanzania)

Sole Bookrunner
US$150mn
2 Years
2011

Energy

Metals & Mining

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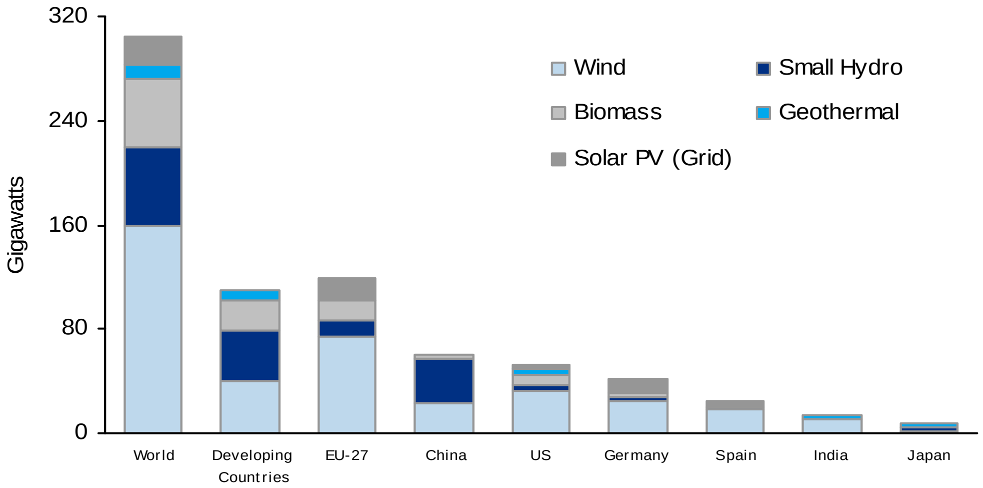
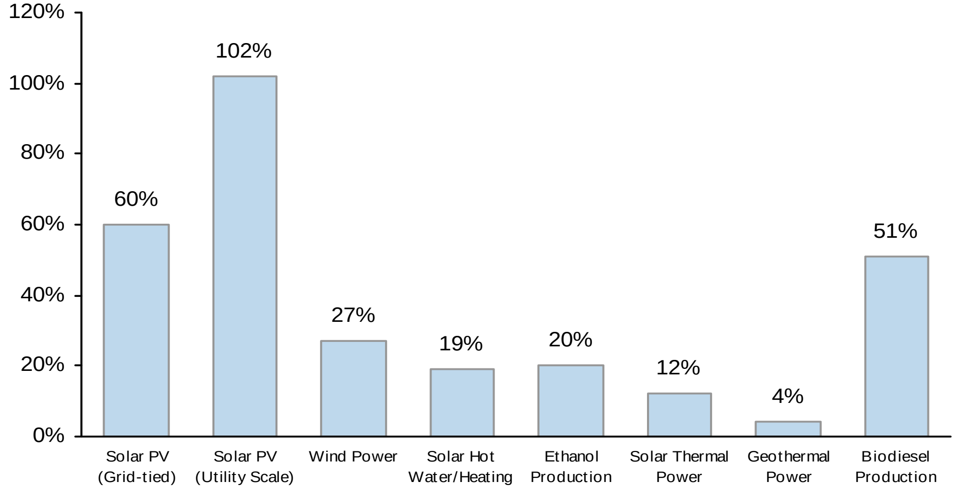
Global Market for Renewable Energy to 2010

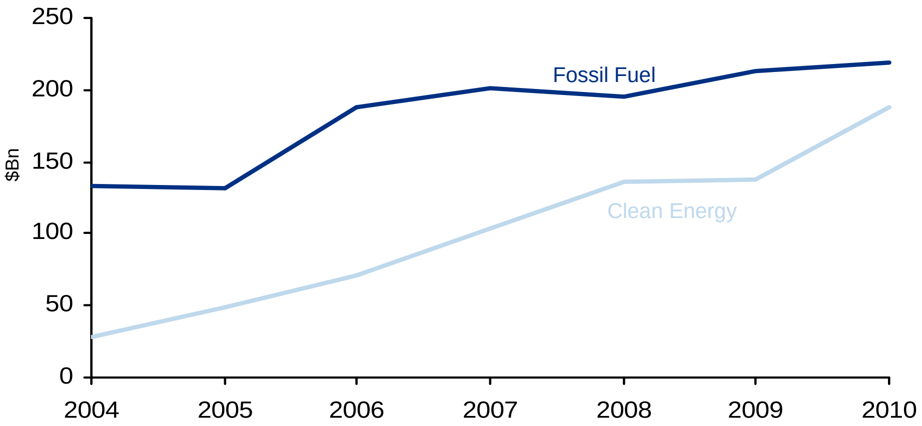
Renewable Power Installed Capacity
2009



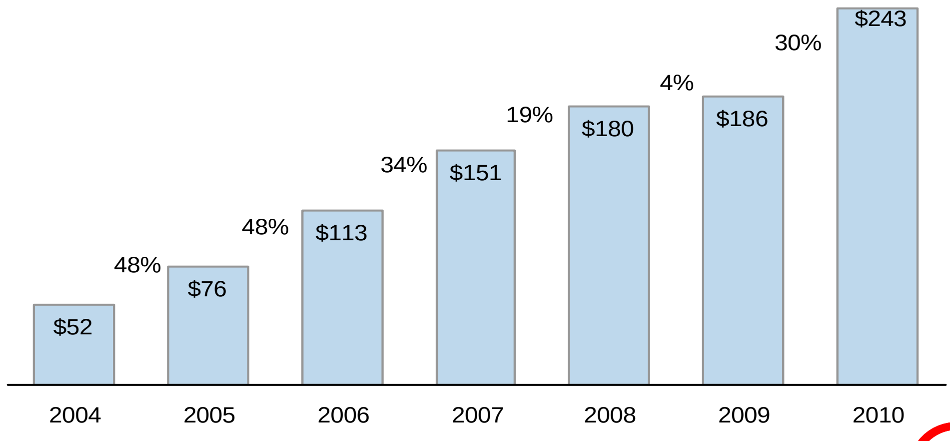
Average Annual Growth Rates by Technology
CAGR 2004 to 2009



Annual Generating Capacity Investment
2004 – 2010 $ Billions/Year



Global Annual Investment in Clean Energy
2004 – 2010; $ Billions/Year
Plus Annual Growth Rates (%)



Source: Bloomberg New Energy Finance, REN21 Renewables Global Status Report.

Wind Technology

Wind Turbine Size Range

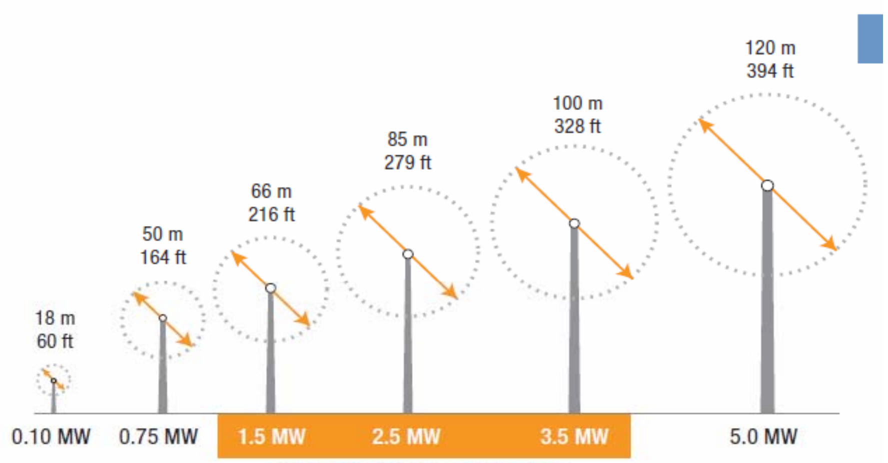
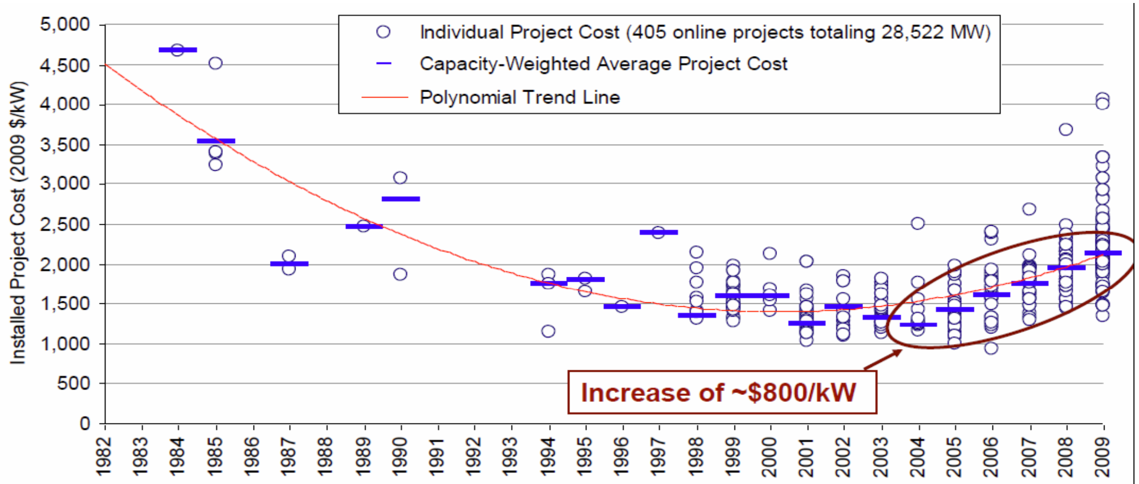


Image: NREL

Installed Wind Project Costs



Graph: LBNL

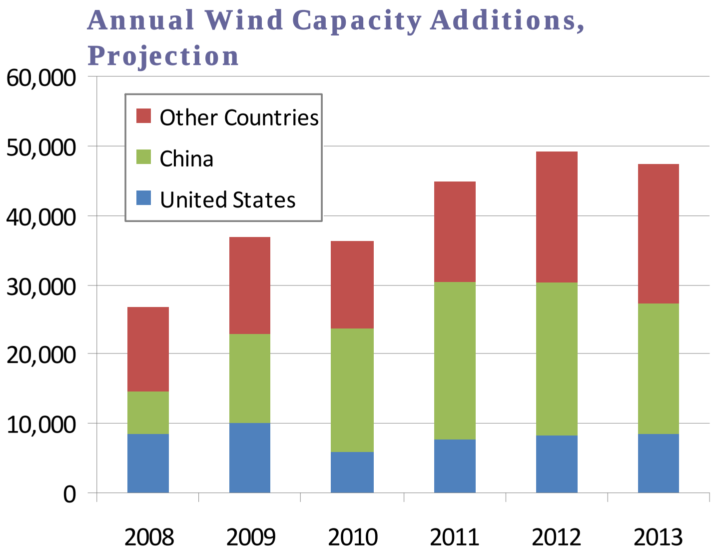
Horizontal Axis

Vertical Axis

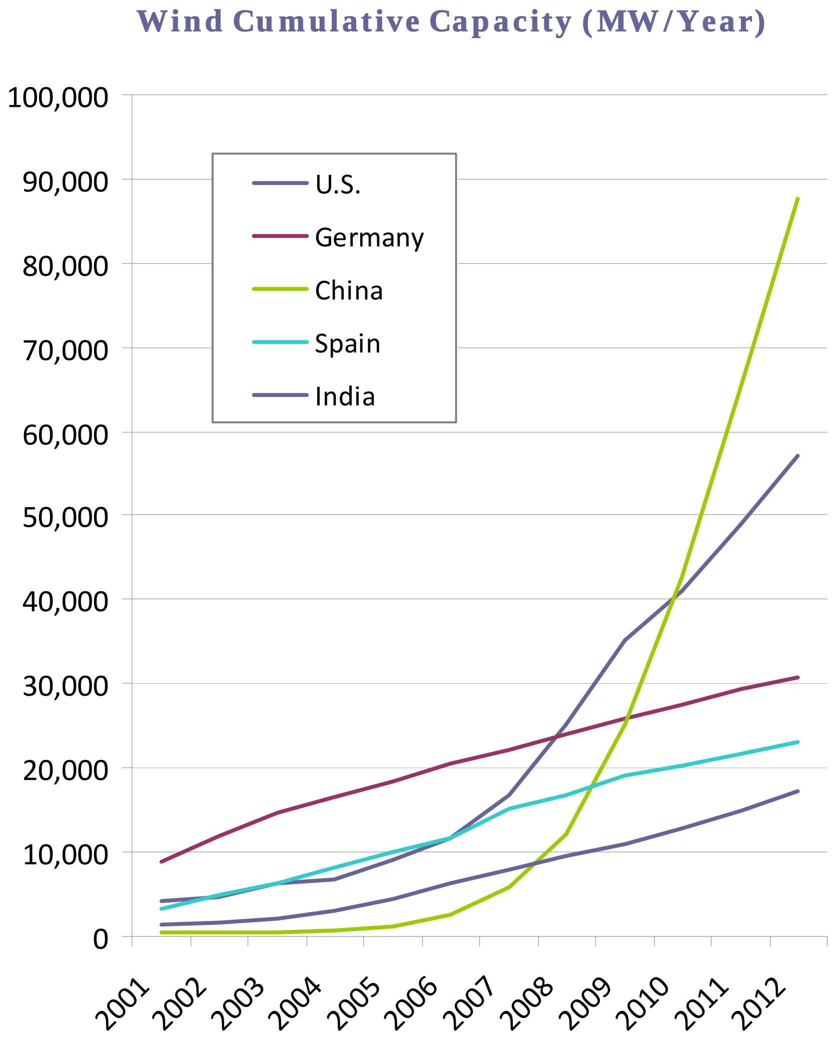
Building Integrated

Offshore

Global Wind Market



Sources: BNEF, GWEC



Sources: BNEF, GWEC,
Earth Policy Institute

Solar Photovoltaic (PV) Technologies

Crystalline Silicon

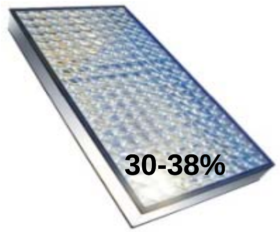
Percentage = Cell Efficiency

Monocrystalline (c-Si)
Image: SunPower

Multicrystalline (mc-Si)
Image: Kyocera

- Higher materials cost
- Area needed per kW= 7-8m²

Concentrator Photovoltaics (CPV)

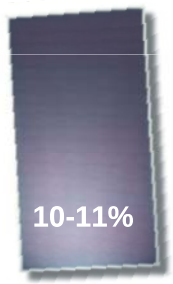


Multijunction
Image: Concentrix Solar

- Lower materials cost
- Early-stage

Thin Film

Amorphous Silicon (a-Si)
Image: Sharp



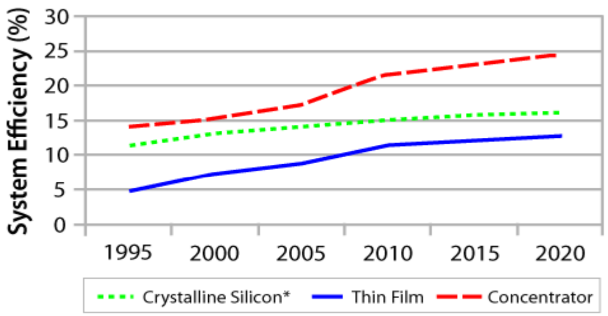
Cadmium telluride (CdTe)
Image: First Solar

Copper indium (gallium) diselenide (CIS or CIGS)
Image: MiaSole

- Lower materials cost
- Area needed per kW = 10-15m²

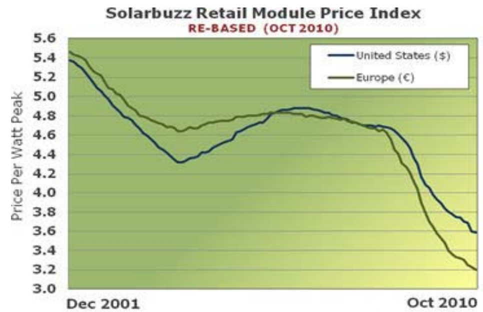
Source: EPIA

Efficiency Trends



Source: DOE

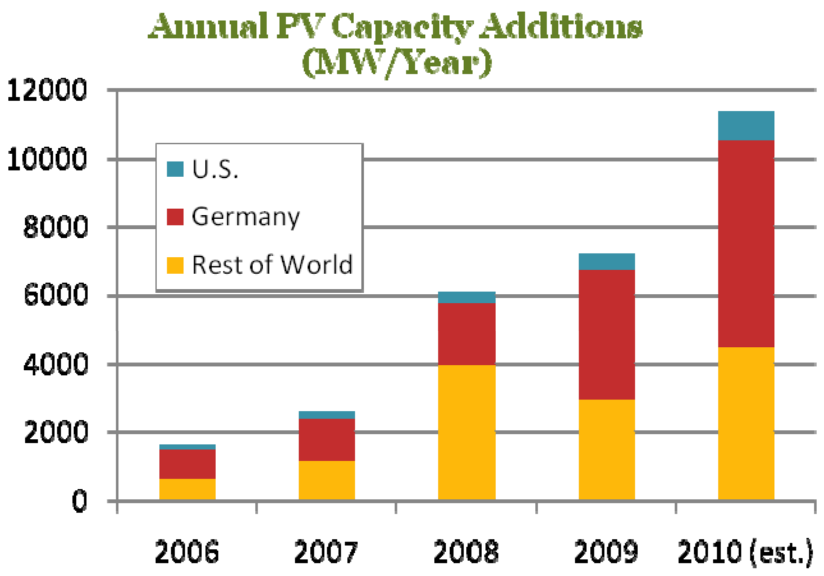
Cost Trends

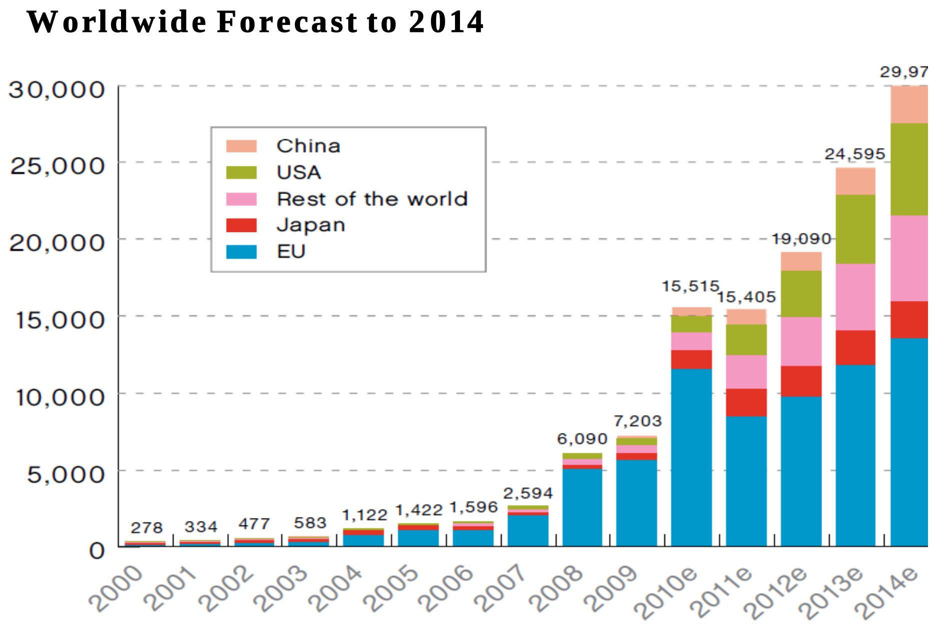


Source: Solarbuzz

Source: Solarbuzz

Global Solar PV Market





Source: EPIA, May 2010

- 30 GW/year at $3/watt will require $90 Billion/year capital funding in 2014
- After big increases in 2008-2011, the EU market is expected to decline while growth is expected in the U.S., Japan, China and ROW

Solar Thermal Electric Technologies

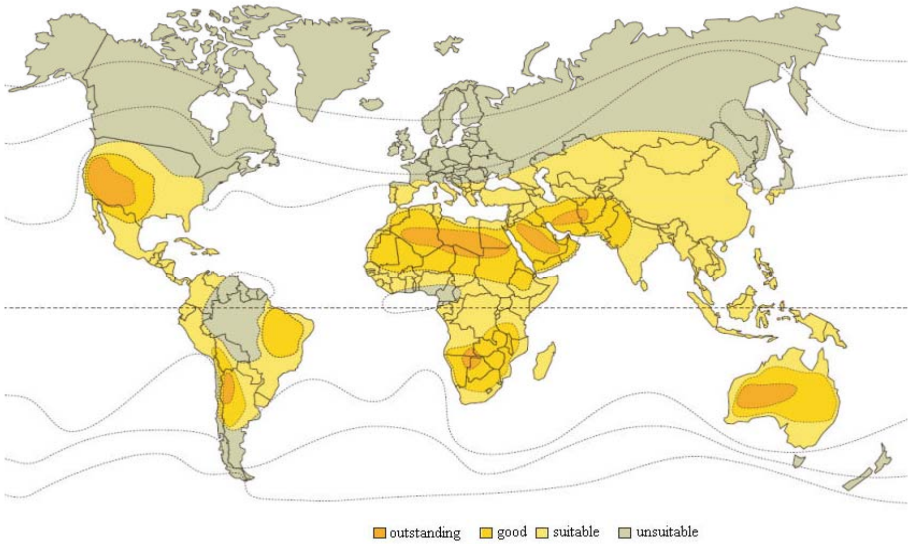
- Temperatures of around 700°C
- Tracks sun in 1 direction
- Water intensive

- Temperatures of 800-1,000°F
- Tracks sun in 2 directions

- Highest efficiency 25-30%
- Temperatures of over 1400°F
- Less water intensive

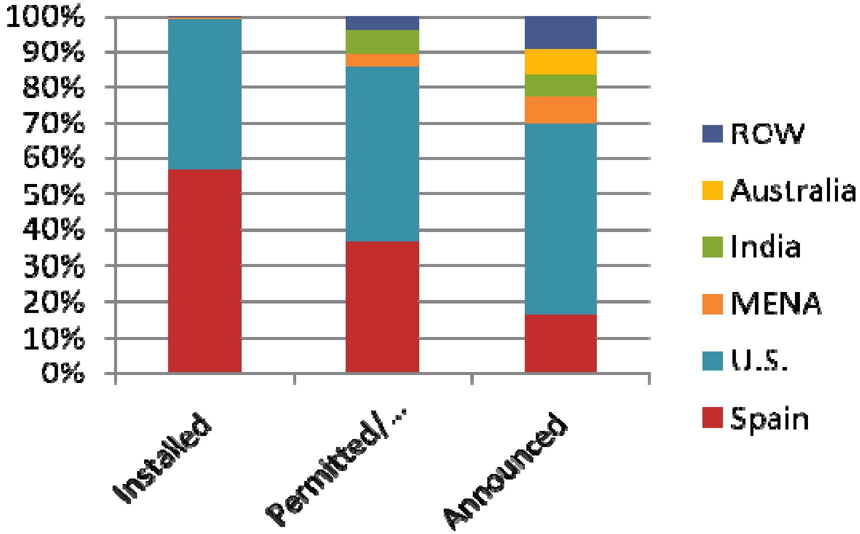
Global STEG Market

Solar Thermal Electric Potential Around the World



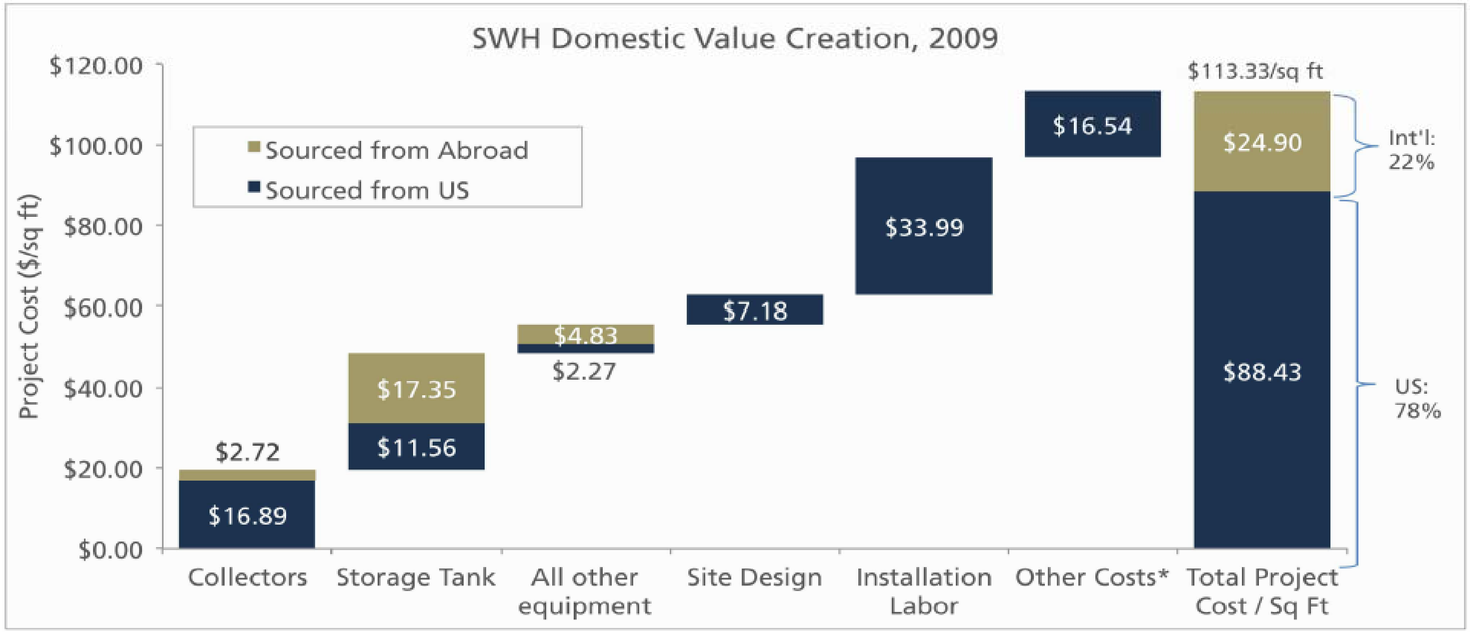
Source: Solar Millennium AG

Solar Thermal Electric Capacity Around the World



Source: BNEF (Dec 2010)

Solar Thermal Technologies and Content

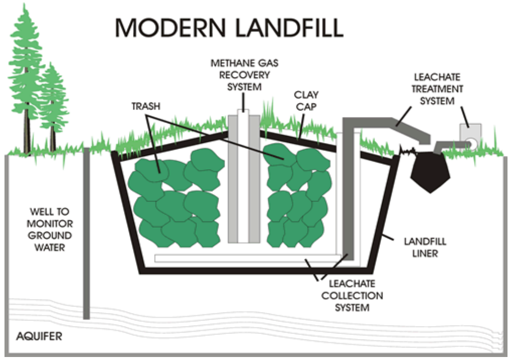


Biopower Technologies

Wood & Crops

- Direct-firing
- Co-firing/ Repowering
- Gasification
  - Converts biomass into syngas
  - Can be used for bioproducts
  - Combined cycle
- Pyrolysis
  - biomass into pyrolysis oil
  - Can be used for bioproducts
- Anaerobic Digestion
  - Bacteria used to decompose organic matter

Biogas



- Landfill gas
  - Anaerobic bacteria in landfills produces biogas that contains methane
  - Gas can be used for electricity
- Animal waste
  - Digesters or ponds
  - Can be used for electricity or heat

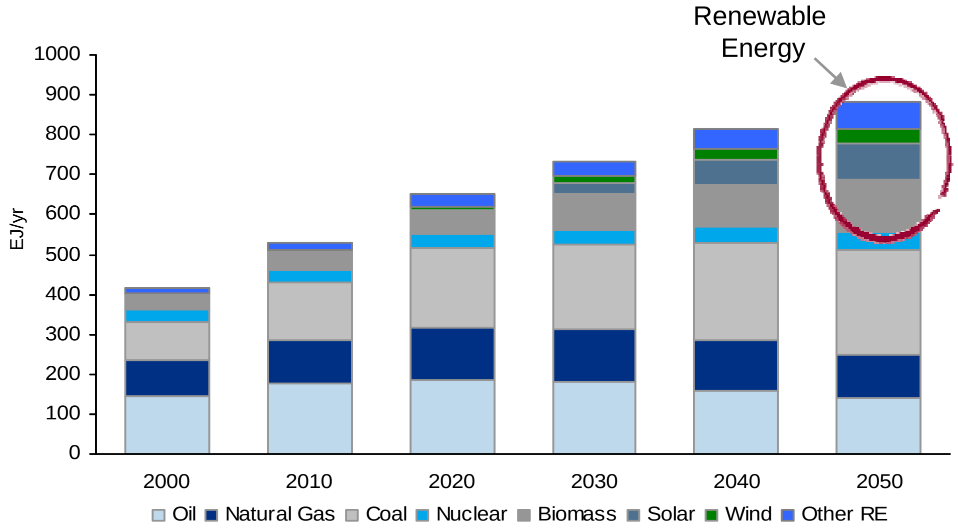
Waste Energy

- Types:
  - Waste-to-energy plants
  - Solid waste incinerators
- 2nd largest source of biomass energy in U.S.
- Burned for electricity and heat
- Reduces waste in landfills
- 14% of solid waste burned in U.S.

Outlook on Renewable Energy: Current and New Policy

Shell “Scramble” Scenario

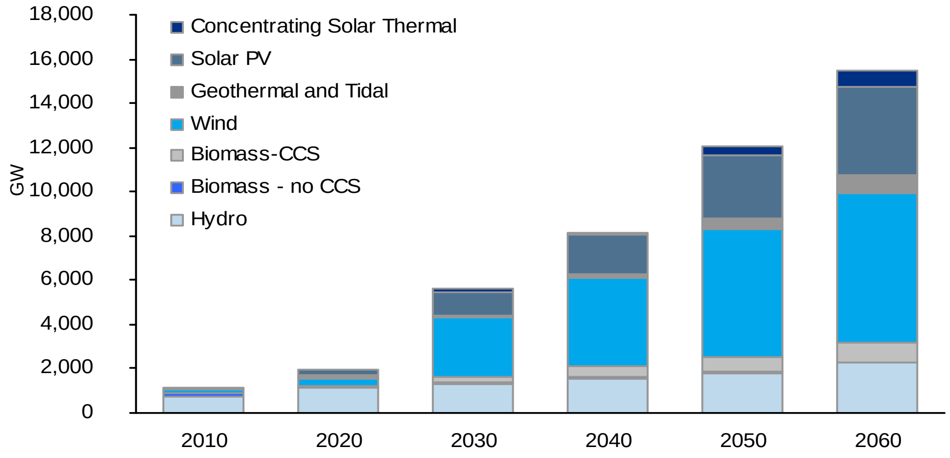
Global Primary Energy Demand



- Shell Scenarios:
  - 1996: 50% Renewable Energy by 2060
  - 2010: 30% Renewable Energy by 2050
- BP Outlook:
  - 2010: 13% - 17% Renewable Energy by 2030

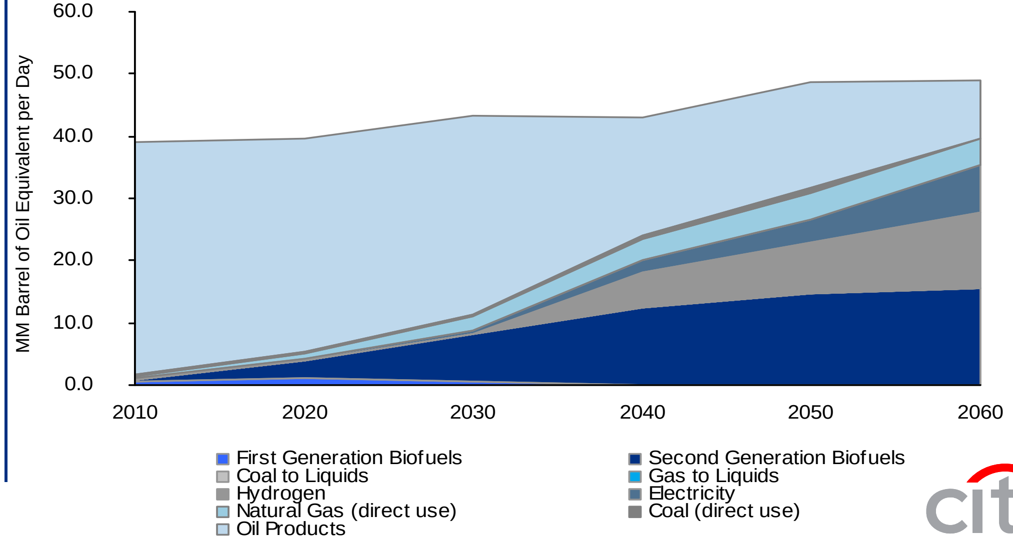
IEA’s RETD ACES Scenario

Renewable Energy Installed Capacity



IEA’s RETD ACES Scenario

Transportation Fuel Demand



Source: Bloomberg New Energy Finance, REN21 Renewables Global Status Report.

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Implications for South Africa

- Opportunity to apply “lessons learned” from around the world
- FIT is a proven success – leaving project approvals to decisions of the lenders
- Bidding systems can work but generally result in many PPAs but less actual Generation
- Key is creating a system and leaving it in place for years:
  - Government to set the rules
  - Utility to interconnect and purchase the output
  - Developers to be free to develop projects within the rules
  - Investors and lenders to decide which projects get financed after all is known
- Bright future for renewable energy in South Africa

Citi believes that sustainability is good business practice. We work closely with our clients, peer financial institutions, NGOs and other partners to finance solutions to climate change, develop industry standards, reduce our own environmental footprint, and engage with stakeholders to advance shared learning and solutions. Highlights of Citi's unique role in promoting sustainability include: (a) releasing in 2007 a Climate Change Position Statement, the first US financial institution to do so; (b) targeting $50 billion over 10 years to address global climate change: includes significant increases in investment and financing of renewable energy, clean technology, and other carbon-emission reduction activities; (c) committing to an absolute reduction in GHG emissions of all Citi owned and leased properties around the world by 10% by 2011; (d) purchasing more than 234,000 MWh of carbon neutral power for our operations over the last three years; (e) establishing in 2008 the Carbon Principles; a framework for banks and their U.S. power clients to evaluate and address carbon risks in the financing of electric power projects; (f) producing equity research related to climate issues that helps to inform investors on risks and opportunities associated with the issue; and (g) engaging with a broad range of stakeholders on the issue of climate change to help advance understanding and solutions.

Citi works with its clients in greenhouse gas intensive industries to evaluate emerging risks from climate change and, where appropriate, to mitigate those risks.

efficiency, renewable energy & mitigation