




Addressing Technology Transfers in the Global Climate and Energy Agendas 2015-2030

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PICMET'2015 Conference : « Management of the Technology Age »
Portland (OR) 2-5 August 2015

Summary of the Presentation

- ❖ **Introduction to « Technology Transfer » Stakes from a Climate and Energy Global Agendas Perspective**
- ❖ Part. I **Until Now** : Setting the « Technology Transfer » Scene under the Climate Change Negotiations (UNFCCC). Towards COP21 **Paris Dec. 2015**
- ❖ PART II **Beyond 2015** : The **UN 17 Sustainable Development Goals (SDGs)** and the **STI/Technology Transfer contribution to the Global Agendas. New-York (Sept. 2015)**
- ❖ Part III **The Financial World Adaptation. Why and How the Financing for Development (FfD) Global Agenda can rely on Technology Needs Assessments (TNA). Addis-Ababa (July 2015)**
- ❖ **Conclusion : Strengthening International Cooperation in Technology for SDGs Global Positive Impact**

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Technology Transfer Mechanisms, Technology Needs and Needs Assessment: UNFCCC* Definitions

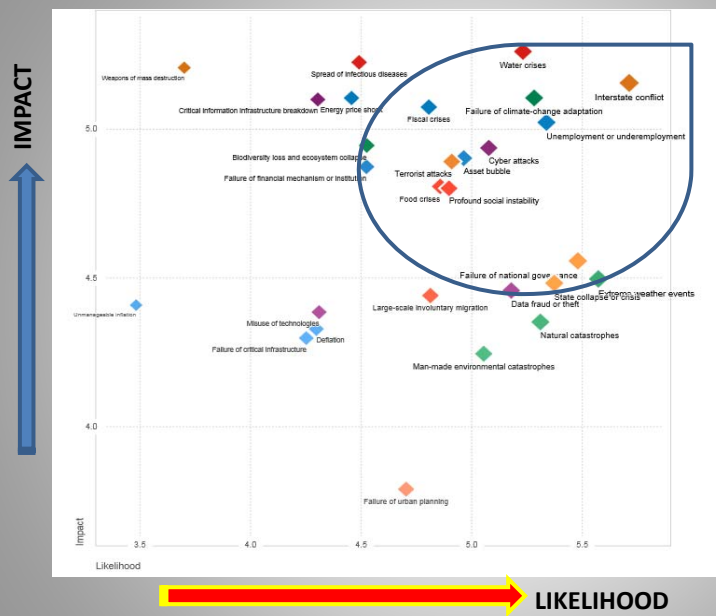
- **Mechanisms for Technology Transfer** are made to facilitating the support of financial, institutional and methodological activities:
 - “- (a) to enhance the coordination of the full range of stakeholders in different countries and regions;
 - (b) to engage them in cooperative efforts to accelerate the development and diffusion **through technology cooperation and partnerships** (public/public, private/public and private/private);
 - and (c) to facilitate the development of projects and programs to support such ends.”

- **Technology Needs and Needs Assessments** are “a set of country-driven activities that identify and determine the priorities.
 - They involve different stakeholders in a consultative process to **identify the barriers to technology transfer and measures to address these barriers** through sectoral analyses.
 - These activities **may address soft and hard technologies, such as mitigation and adaptation technologies, identify regulatory options and develop fiscal and financial incentives and capacity-building.** »

* UNFCCC stands for United Nations Framework Convention on Climate Change.

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Perception of RISKS 2015 / World Economic Forum



Climate Change :
Addressing a Matter of High Concern in case of Failure to adapt.

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Why addressing Technology Transfers in International Agendas now ?

A matter of Behavioral - significant - Change

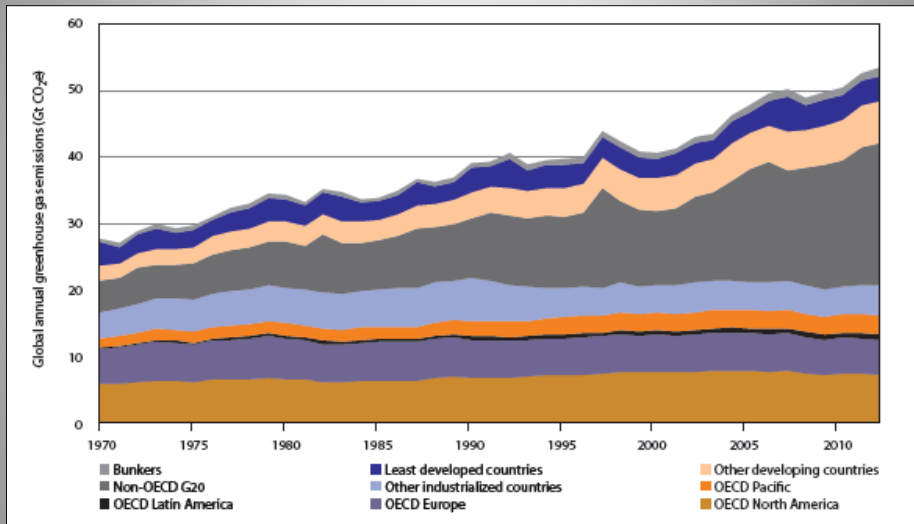
Because of the **tremendous potential contribution and impact of STI / Technology and Management of the Technology Age**, to Stakeholders' :

- **AWARENESS** : Building an international consensus
- **READINESS** : Aligning Stakeholders and policies agendas:
- **RESPONSE** : Action, Compliance , Feedback and Improvement.
- **and EVALUATION**: *On going* Feedback with relevant Information Systems, Predictive Models and relevant use of Big Data *for* multi-level Governance Continuum.



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Setting the Scene (I) : Gt CO₂ Emissions 1970-2012



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Setting the Scene (2): Making efforts? Impact Order of Magnitude of *Emissions Reduction* 2025 - 2050

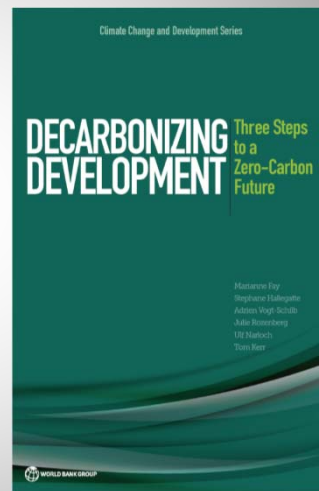
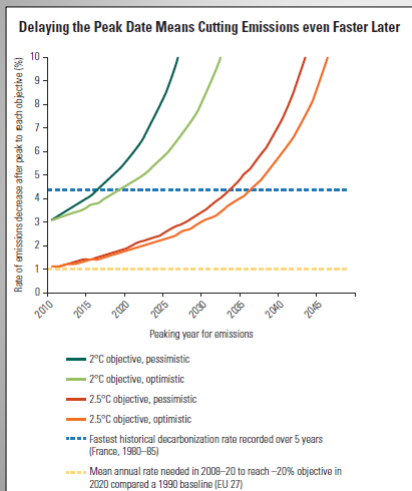
Year	Median (Gt CO ₂ e)	Relative to 1990 emissions	Relative to 2010 emissions	Range (Gt CO ₂ e)	Relative to 1990 emissions	Relative to 2010 emissions
2025	47	+27%	-4%	40 to 48	+8 to +30%	- 2 to -18%
2030	42	+14%	-14%	30 to 44	-19 to +19%	-10 to -39%
2050	22	-40%	-55%	18 to 25	-32 to -51%	- 49 to -63%

Notes: Since current emissions are 54 Gt CO₂e and rising (see Section 4 of the Summary), substantial emission reductions will be needed to reach these levels.

Source : UNEP *The Emissions Gap Report 2014*

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World Bank Group (WBG) **Warning:** The *later* Decarbonization of Development, The *faster* the rate of GHS Cuts needed (*2°+ scenarios*)



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Energy Agendas.

« King Coal » : Production and International Trade



Producers	Mt	% of world total
People's Rep. of China	3 561	45.5
United States	904	11.6
India	613	7.8
Indonesia	489	6.3
Australia	459	5.9
Russian Federation	347	4.4
South Africa	256	3.3
Germany	191	2.4
Poland	143	1.8
Kazakhstan	120	1.5
Rest of the world	740	9.5
World	7 823	100.0

2013 data

Net exporters	Mt
Indonesia	426
Australia	336
Russian Federation	114
United States	99
Colombia	74
South Africa	69
Kazakhstan	32
Canada	28
Mongolia	17
DPR of Korea	16
Others	26
Total	1 237

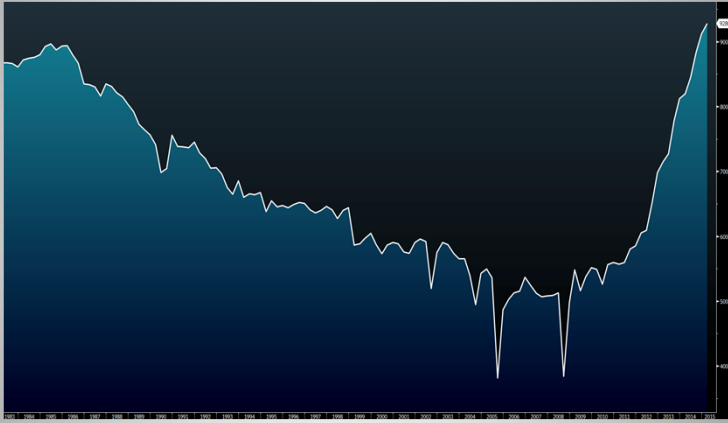
2013 data

Net importers	Mt
People's Rep. of China	320
Japan	196
India	178
Korea	127
Chinese Taipei	68
Germany	50
United Kingdom	49
Turkey	28
Malaysia	23
Italy	20
Others	211
Total	1 270

Source : International Energy Agency /IEA

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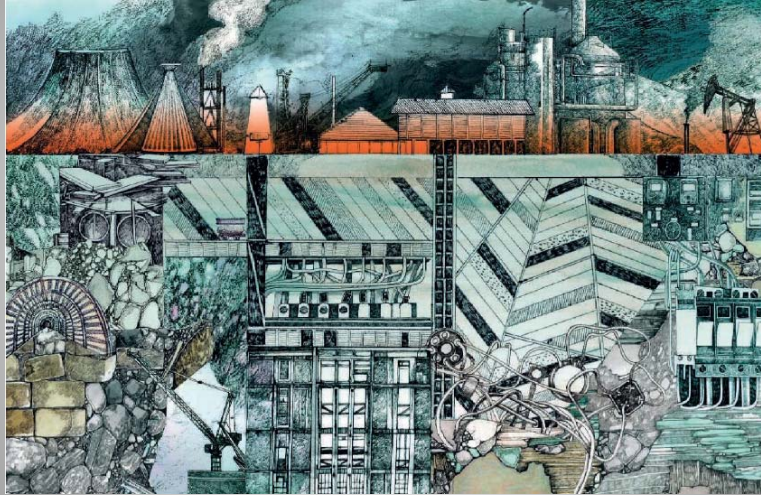
Energy Agendas: Oil production in the USA 1983-2014



Source: International Energy Agency. *Shale Oil/Gas impact.*

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Technology Transfers as a solution: Which Ones ?

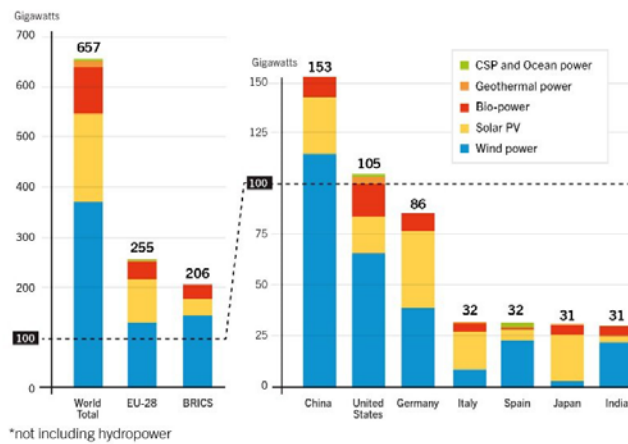


Lucile clerc, L'Obs 2015-07-9

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Clean Technologies for Energy : Conditions for Transfer ?

Renewable Power Capacities* in World, EU-28, BRICS, and Top Seven Countries, 2014

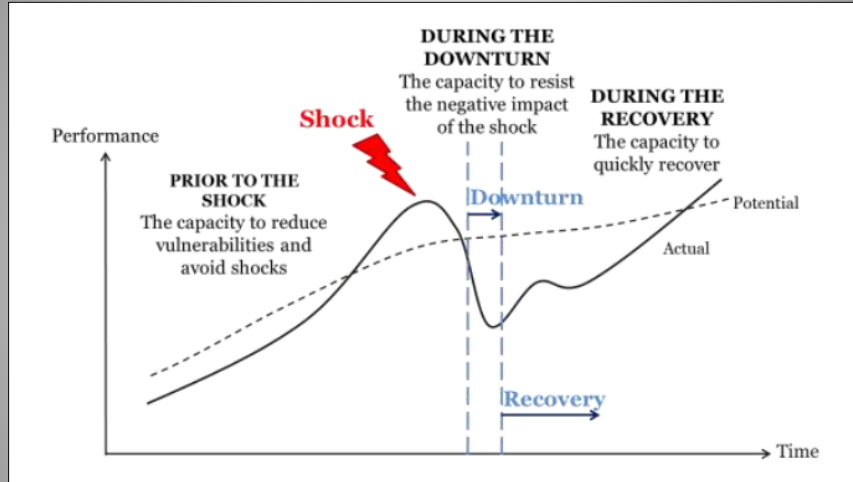


Source: REN21 Renewables 2015 Global Status Report



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Are We Resilient to Climate Change ? What would we need to improving Global Resilience ?

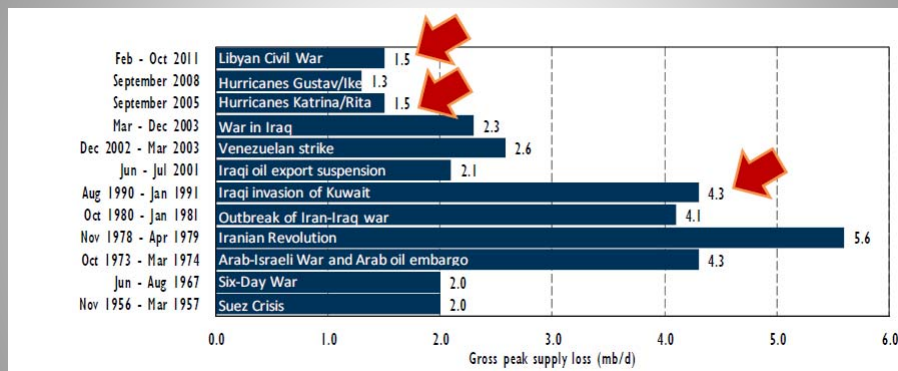


OECD Working Definition of RESILIENCE : **Capacity of an economy to reduce vulnerabilities, to resist to shock and to recover quickly.**

Source : OECD 2015. « Resilience, a framework analysis »

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Reminder: Major Oil Supply Disruptions



Source : www.iea.org GROSS PEAK SUPPLY LOSS Mb/d

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Measures of *Ex-ante* and *Ex-post* Resilience and the Potential Role of Technology

Ex-ante resilience	Ex-post resilience	
<p>Lower vulnerability to shocks</p> <ul style="list-style-type: none"> • Vulnerability indicators: <ul style="list-style-type: none"> • Financial sector imbalances • Non-financial sector imbalances • Asset market imbalances • Public sector imbalances • External imbalances • International spillovers, contagion and global risks 	<p>Higher resistance to shocks</p> <ul style="list-style-type: none"> • Recession amplitude • Recession duration • Maximum negative output gap 	<p>Quicker recovery following a shock</p> <ul style="list-style-type: none"> • Returning to previous peak • Returning to pre-crisis trend • Closing the output gap • Returning to counter-factual estimate of potential "had the crisis not happened"
<p style="text-align: center;">Lower overall costs of crises</p> <ul style="list-style-type: none"> • Cumulative output loss relative to previous peak • Cumulative negative output gaps • Cumulative negative output gaps relative to counterfactual estimate of potential "had the crisis not happened" • Indicators to gauge the impacts of shocks beyond GDP (e.g. unemployment, long term unemployment, poverty etc.) 		

Source : Id. OECD 2015

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Beyond 2030 : Increases in Energy demand for SPACE COOLING after accounting for CLIMATE CHANGE

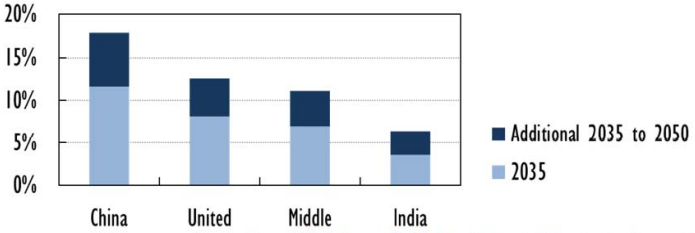


International Energy Agency
1974-2014
Secure • Sustainable • Together

Strengthen energy sector resilience to climate change

www.iea.org

Past energy demand patterns cannot serve to plan future energy systems.



Region	2035 Demand (%)	Additional 2035 to 2050 (%)
China	~11.5	~6.5
United States	~8.5	~4.5
Middle East	~7.5	~4.5
India	~4.5	~2.5

Source: *World Energy Outlook Special Report: Redrawing the Energy-Climate Map, 2013*


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MATRIX of LOW CARBON PATENT EXPORTS, CAPITAL GOODS AND FOREIGN DIRECT INVESTMENT/FDI

Patent flows	Destination		
	OECD	Emerging economies	Least developed countries
Origin			
OECD	75%	16%	2%
Emerging economies	5%	<1%	<1%
Least developed countries	2%	<1%	<1%

Capital goods	Destination		
	OECD	Emerging economies	Least developed countries
Origin			
OECD	55%	19%	<1%
Emerging economies	14%	10%	<1%
Least developed countries	<0.1%	<0.1%	<0.1%

FDI links	Destination		
	OECD	Emerging economies	Least developed countries
Origin			
OECD	66%	30%	1%
Emerging economies	2%	2%	<0.1%
Least developed countries	0%	0%	0%

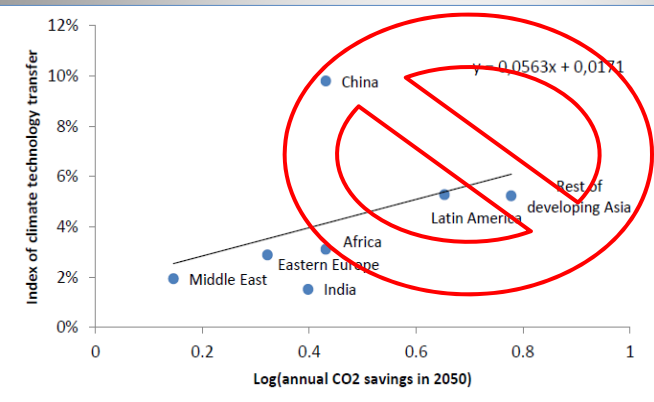


The Middelgrunden , offshore wind farm outside Copenhagen, Denmark.


Source : Institut Mines-Telecom PARISTECH. Mathieu Glachant

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CO2 Emissions Abatement Potential and Index of Climate Technology Transfer (based on Patents, Trade and FDI)



Region	Log(annual CO2 savings in 2050)	Index of climate technology transfer
Middle East	0.15	2.0%
Eastern Europe	0.35	2.5%
India	0.45	1.5%
Africa	0.45	3.0%
China	0.45	9.5%
Latin America	0.65	4.5%
Rest of developing Asia	0.75	5.0%



Green Hydrogen for Industry

Source: Authors' calculations based on McKinsey (2010), PATSTAT, COMTRADE and ORBIS data. The straight line is estimated with the OLS method (R² = 0.1694). The index of technology transfer is the average of the share of imports to the region through patents, trade, and FDI.

Mathieu Glachant. « Promoting the International transfer of Low Carbon Technology. CAS Report 2013

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The Role of Market and Investment Conditions in Clean Energy Licensing Agreements: Other issues than just « IPR ».

Importance of decision factors for licensing agreements with recipients in developing countries

(Percentage of survey respondents)

	<i>Protection of intellectual property rights</i>	<i>Scientific capabilities and infrastructure</i>	<i>Favourable market conditions</i>	<i>Favourable investment climate</i>
Not a factor	18	13	16	15
A basic precondition for doing business, but not a driving factor	28	37	26	27
Significantly attractive condition, would encourage negotiation	29	37	44	42
Compelling reason towards an agreement	25	13	14	16

Source: United Nations Environment Programme (UNEP), European Patent Office and International Centre for Trade and Sustainable Development, *Patents and clean energy: bridging the gap between evidence and policy* (2010).

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Technology transfers are relevant in almost all the 17 Sustainable Development Goals (UN SDGs)

➔ Goal 1: End poverty in all its forms everywhere
 Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
 Goal 3: Ensure healthy lives and promote well-being for all at all ages
 Goal 4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
 Goal 5: Achieve gender equality and empower all women and girls
 Goal 6: Ensure availability and sustainable management of water and sanitation for all
➔ Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all
 Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
 Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
 Goal 10: Reduce inequality within and among countries
 Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
 Goal 12: Ensure sustainable consumption and production patterns
➔ Goal 13: Take urgent action to combat climate change and its impacts
 Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
 Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
 Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
 Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

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United-Nations 2015-2030 Agenda: « Road to Dignity »: the Role of Energy and Climate Global Agendas


The final goal of this Agenda is to fully eradicating poverty in all its forms

17 Sustainable Development Goals (SDGs)
169 Sub-SDGs

- **SDG 1 : Eradicate Poverty**
- **SDG 7 : Energy for All**
- **SDG 13 : Climate change** (under UNFCCC Leadership)

Beware : « *Not a business as usual aiming at reducing poverty or promoting Environmental management* »:

- **Cherry picking one goal among the 17 SDGs is not an option** : *Aligning Policies for a positive impact is required, overcoming the easy, traditional « silo -approach »*
- **Universality** of the Agenda : *All countries, private stakeholders involved and committed as well.*
- **Transparency, monitoring accountability and review** (Big Data may help).



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Energy and Climate Policies to reduce GHG Emissions: the contribution of Technology and Standards Policies

Policy Type	Policy options
Price-based instruments	Taxes on CO ₂ directly Taxes/charges on inputs or outputs of process (e.g. fuel and vehicle taxes) Subsidies for emissions-reducing activities Emissions trading systems (cap and trade or baseline and credit)
Command and control regulations	Technology standards (e.g. biofuel blend mandate, minimum energy performance standards) Performance standards (e.g. fleet average CO ₂ vehicle efficiency) Prohibition or mandating of certain products or practices Reporting requirements Requirements for operating certification (e.g. HFC handling certification) Land use planning, zoning
Technology support policies	Public and private RD&D funding Public procurement Green certificates (renewable portfolio standard or clean energy standard) Feed-in tariffs Public investment in underpinning infrastructure for new technologies Policies to remove financial barriers to acquiring green technology (loans, revolving funds)
Information and voluntary approaches	Rating and labelling programmes Public information campaigns Education and training Product certification and labelling Award schemes

Source: Hood (2011), based on de Serres, Murin and Nicoletti (2010). Note: the bottom three categories are in the second and third pillars of climate mitigation instruments (market barrier removal and technology support).

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Energy (for ICT) for All? When ? Where ?



2015
TIME FOR
GLOBAL ACTION
FOR PEOPLE AND PLANET

**United Nations Summit to adopt the
post-2015 development agenda
25 Sept. 2015 - 27 Sept. 2015
New York**



UNESCO

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UN- Post-2015 Agenda SDG 7

“Ensure access to affordable, reliable, sustainable and modern energy for all”

- 7.1 By 2030 ensure **universal access** to affordable, reliable, and modern energy services;
- 7.2 Increase substantially the share of **renewable energy** in the global energy mix by 2030;
- 7.3 Double the global rate of improvement in **energy efficiency** by 2030;
- 7.a By 2030 **enhance international cooperation to facilitate access to clean energy** research and technologies, including **renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies**, and promote investment in energy infrastructure and clean energy technologies;
- 7.b **By 2030 expand infrastructure and upgrade technology** for supplying modern and sustainable energy services for all in developing countries, particularly LDCs and SIDS.

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Technology Transfers in the Climate Change Negotiations : Rationale

“Recognizing that there **is a crucial need to accelerate innovation in the development, deployment, adoption, diffusion and transfer of environmentally sound technologies** among all Parties, and particularly from developed countries to developing countries, **for both mitigation and adaptation,**

Further recognizing **that current institutional arrangements, access to financing and suitable indicators** for monitoring under the Convention for the implementation of Article 4, paragraph 5, **are limited and should be enhanced** to deliver immediate and urgent technology development, deployment, diffusion and transfer to developing countries,

Further recognizing that **the immediate and urgent delivery of technology development, deployment, diffusion and transfer to developing countries requires suitable responses**, including a continued emphasis by all Parties on the enhancement of **enabling environments, facilitating access to technology information and capacity-building, identification of technology needs and innovative financing** that mobilizes the vast resources of the **private sector** to supplement public finance sources where appropriate, »

Source : UNFCCC Decision 14-15 December 2007



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The Technology Mechanism in the Climate Change Negotiations : Mandate, TEC and CTCN

1. The **Conference of the Parties (COP)**, by decision 1/CP.16,1 established a **Technology Mechanism**, comprising a **Technology Executive Committee (TEC)** and a **Climate Technology Centre and Network (CTCN)**, to facilitate the implementation of enhanced **action on technology development and transfer**. The objective of that enhanced action is to support action on mitigation and adaptation in order to achieve the full implementation of the Convention.
2. By the same decision, the COP decided that the TEC and the CTCN shall **report to the COP**, through the subsidiary bodies, on their respective activities and the performance of their respective functions.



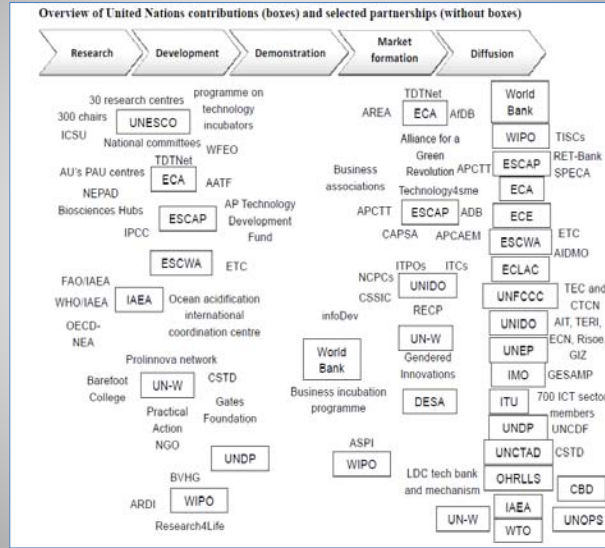
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UNFCCC *Technology Executive Committee (TEC): Mission*

- (a) Provide an overview of technological needs and analysis of policy and technical issues related to the development and transfer of technologies for climate change mitigation and adaptation;
- (b) Consider and recommend actions to promote technology development and transfer, in order to accelerate action on mitigation and adaptation;
- (c) Recommend guidance on policies and programme priorities related to technology development and transfer with special consideration given to the least developed country Parties;
- (d) Promote and facilitate collaboration on the development and transfer of technologies for mitigation and adaptation between governments, the private sector, non-profit organizations and academic and research communities;
- (e) Recommend actions to address the barriers to technology development and transfer in order to enable enhanced action on mitigation and adaptation;
- (f) Seek cooperation with relevant international technology initiatives, stakeholders and organizations, and promote coherence and cooperation across technology activities, including activities under and outside of the Convention;
- (g) Catalyse the development and use of technology road maps or action plans at the international, regional and national levels through cooperation between relevant stakeholders, particularly governments and relevant organizations or bodies, including the development of best practice guidelines as facilitative tools for action on mitigation and adaptation.

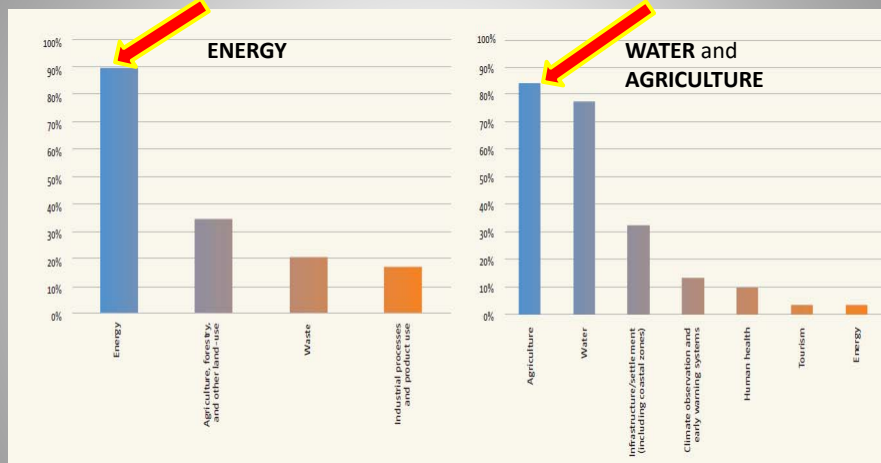
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UNFCCC Technology Executive Committee (TEC): Implementing the Mandate and Missions



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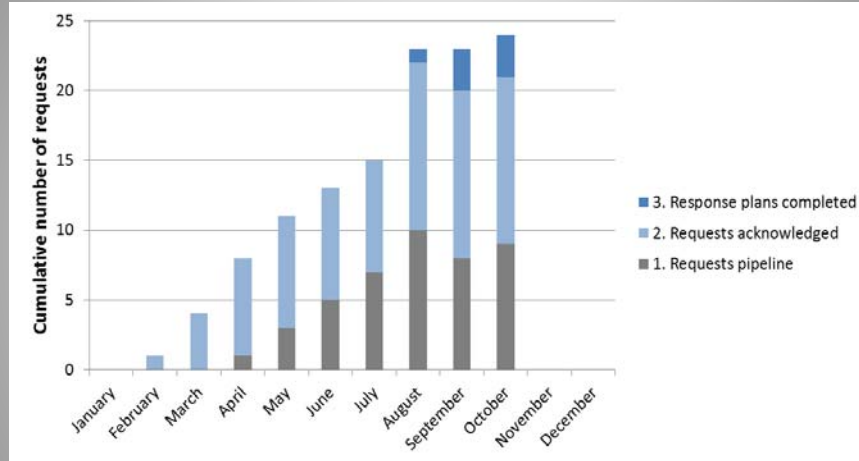
Technology Mechanism : Prioritized sectors for mitigation (1) and adaptation (2) (% of parties)



Source UNFCCC

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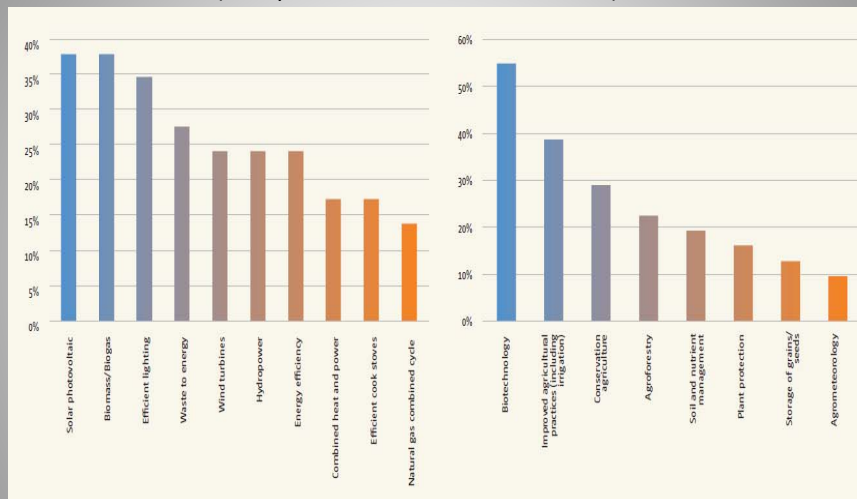
Climate Technology Centre and Network (UNFCCC-CTCN) Technical Assistance Requests and Responses (Oct. 2014)



These requests cover both climate change adaptation and mitigation, with five being related to adaptation, nine to mitigation and nine to both mitigation and adaptation. They are well distributed geographically, with six requests received from Latin American and Caribbean States, eight from Asia-Pacific States, eight from African States and one from Eastern European States. Two of the requests are multi-country requests.

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Selected Technologies for Energy and the Agriculture (% of parties , TEC/CTCN Mechanism)



Source: **TTCLEAR DATABASE**

unfccc.int/ttclear/TNA
ttclear@unfccc.int

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Climate change, Diseases and Transfer of Emerging, Disruptive, Technologies

"Modified mosquitoes begin blitz on Dengue in Brazilian City"

A recent trial in a suburb of another Brazilian city, Juazeiro, showed that within six months the GM mosquitoes had [reduced the native population by 95 per cent](#) – below the theoretical level needed to transmit the disease. "It showed that our method is more effective than any other at eradicating the mosquitoes that transmit disease," says Parry. "With *insecticides*, nothing clears more than 50 per cent of the mosquitoes, whereas we got above 90 per cent."



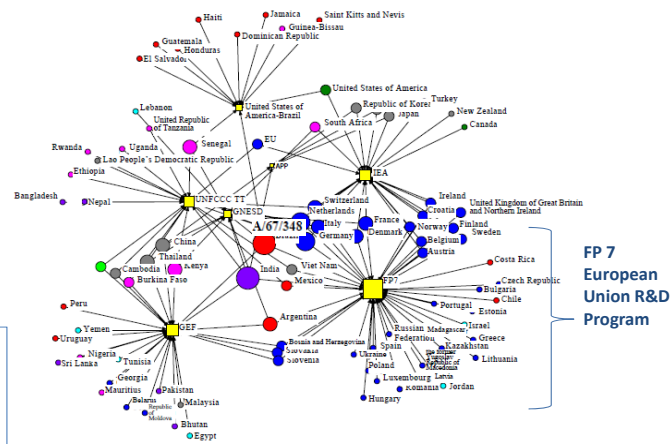
Image : Oxitec. Text : www.newscientist.com

Example of a Synthetic Biology application for Public Health Purpose

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Ex: The impact of Public R&D Investment in International Cooperation for Bio-Energy

Participation network in technology cooperation on bioenergy



Source : UN General Assembly Doc. N°A/67/348, 2012/09/04

Notes: squares: cooperation frameworks; circles: participating countries; circle size: number of participations.
 APP: Asia-Pacific Partnership on Clean Development and Climate; EU: European Union; FP7: seventh Framework Programme of the European Union; GEF: Global Environment Facility; GNSD: Global Network on Energy for Sustainable Development; IEA: International Energy Agency; UNFCCC TT: United Nations Framework Convention on Climate Change technology transfer framework.
 Source: Department of Economic and Social Affairs, background paper, 2011.

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No Sustainable and Affordable Clean Energy Solutions without Raw materials and Rare Earth



World primary supply of the 54 candidate raw materials



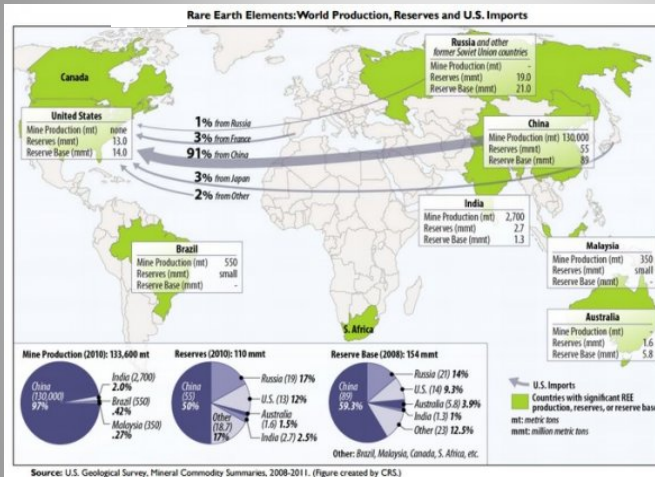
World primary supply of the 20 critical raw materials

http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm

- Technologies for Exploration (Earth and Marine, Space in the Future ?
- Technologies for Cartography / Bathymetry of Oceans floors
- Techniques for Exploitation (open and underground mining)
- Technologies of transformation
- Technologies for Occupational Health and Safety and Training in related Industries (production, transformative, transport, packaging...)
- Technologies for Traceability (physical, accounts, political (« conflict » minerals »).

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Technology Transfers for Peace ? Rare Earth Recycling, from Dependence to Interdependence



Rare earth elements like these are used in a wide variety of technologies, from magnetic resonance imaging to fluorescent lighting. Clockwise from top left: gadolinium, praseodymium, cerium, lanthanum, neodymium and samarium.

Wikimedia Commons

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Accelerating in the UN SDGs Post-2015 Agenda Implementation

- **Three Great Decoupling**
 - of Growth and GHG emissions
 - of Energy Production and GHS emissions
 - of Energy Consumption and GHS emissions

- **Three Great Facilities**
 - Local Loop of low emission Energy for All
 - Local Loop of Water supply/treatment for All
 - Local Loop ICTs for All . Using the “servicization” of economy to ease the infrastructures burden in the transition, in particular in emerging, highly emissive, economies.

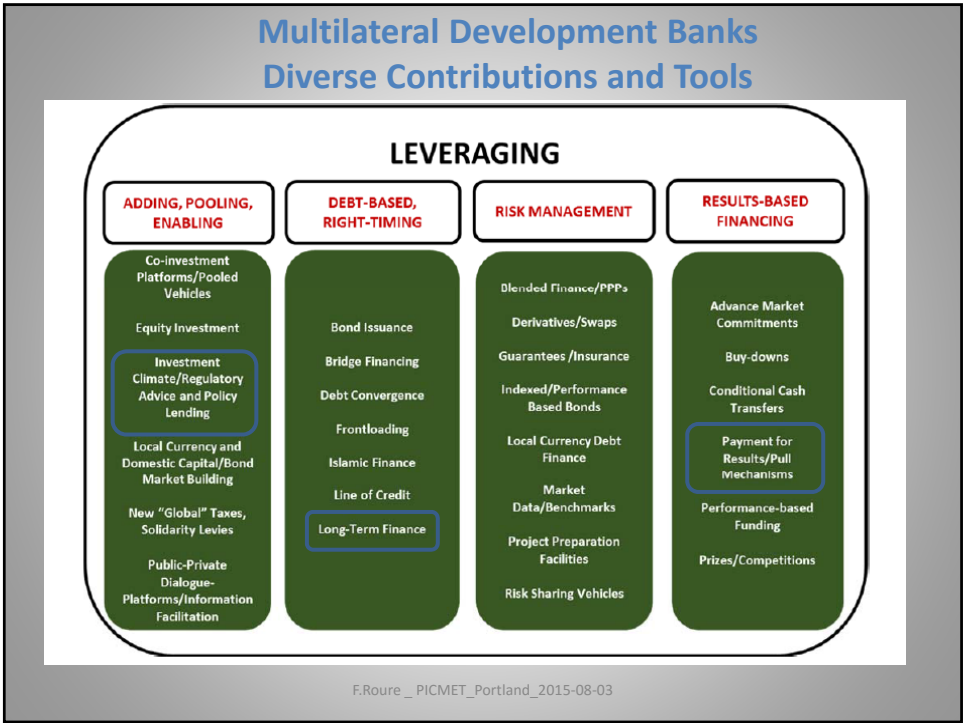
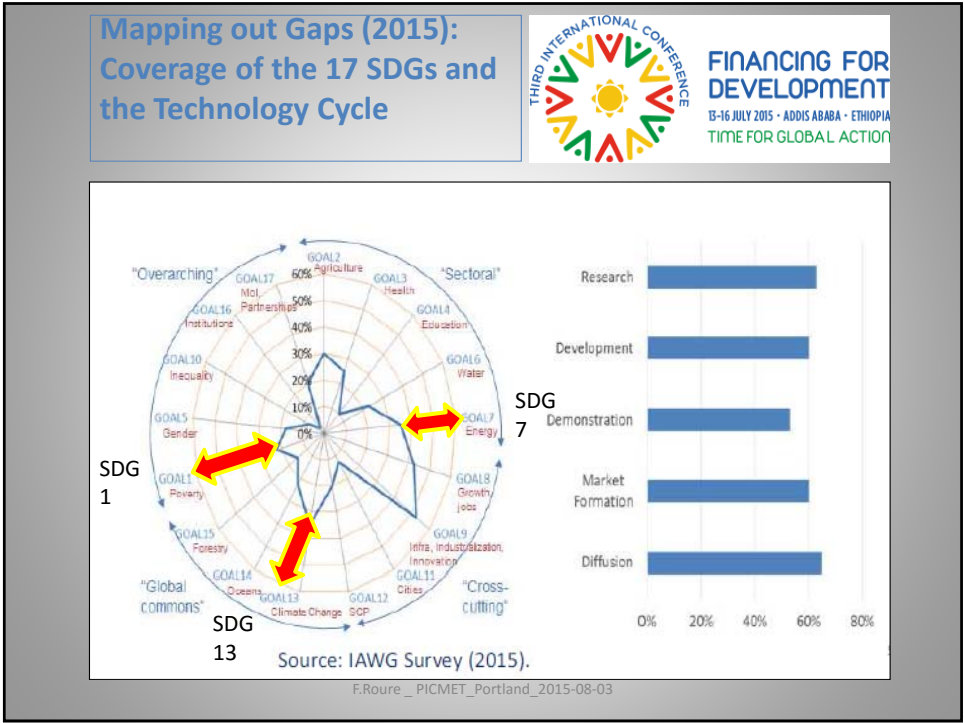
- **Three Great Accelerators** : it is about complete transformation of the way we organize socially. Enhancing long lasting resilience. **PROPOSALS**
 - 1. Make **Finance for Development** climate/energy aware. IPR and energy investment innovative financial mechanisms to unlock investment in energy systems alternative to fossil fuels + Carbon Capture Sequestration (CCS) in industrial process.
 - 2. Set SDGs **International “Civil Corps”** in charge of their *grass root* implementation .
 - 3. Adapt **Consumers Behavior** to challenges by Big Data (**MOOC** Massive Open online courses. **SPOOC** : Short Personalized Open Online course), recognizing that it is Consumption that makes GHS / Climate change happen...not only production.

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Summary of the Presentation

- ❖ **Introduction to « Technology Transfer » Stakes from a Climate and Energy Global Agenda Perspective**
- ❖ Part. I **Until Now** : **Setting the « Technology Transfer » Scene under the Climate Change Negotiations (UNFCCC)**. Towards **COP21 Paris Dec. 2015**
- ❖ PART II **Beyond 2015** : **The UN 17 Sustainable Development Goals (SDGs) and the STI/Technology Transfer contribution to the Global Agendas.** New-York (Sept. 2015)
- ❖ Part III **The Financial World Adaptation. Why and How the Financing for Development (FfD) Global Agenda can rely on Technology Needs Assessments (TNA)** . Addis-Ababa (July 2015)
- ❖ **Conclusion : Strengthening International Cooperation in Technology for SDGs Global Positive Impact**

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Official Development Assistance (ODA) and Other Official Flows (OOF)

Figure 1: Financial Flows to Developing Countries

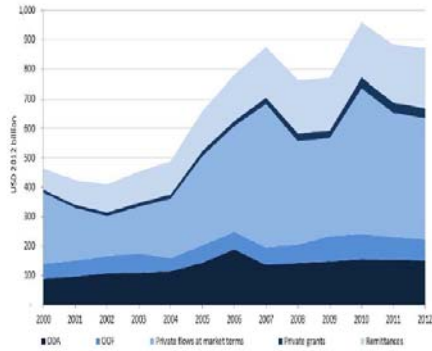
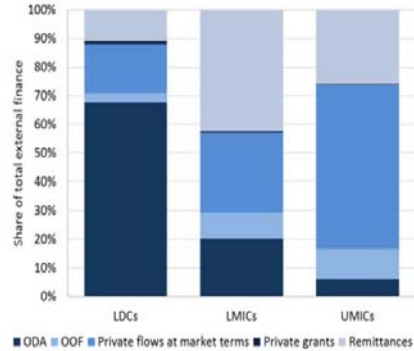


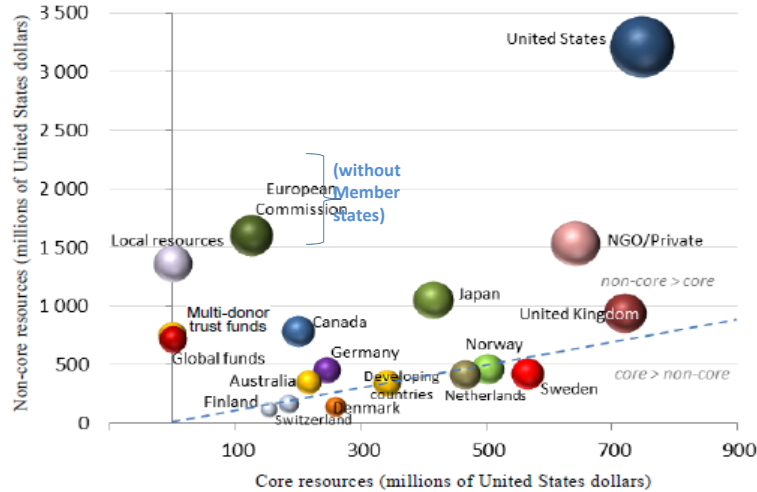
Figure 2: Composition of Financial Flows to Developing Countries – in 2012



Note: ODA=Official Development Assistance; OOF=Other Official Flows; LMICs=Lower Middle Income Countries; UMICs=Upper Middle Income Countries; LDCs=Least Developed Countries. Source: OECD

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Main contributors to United Nations operational activities for development, 2012 \$23.9 billion

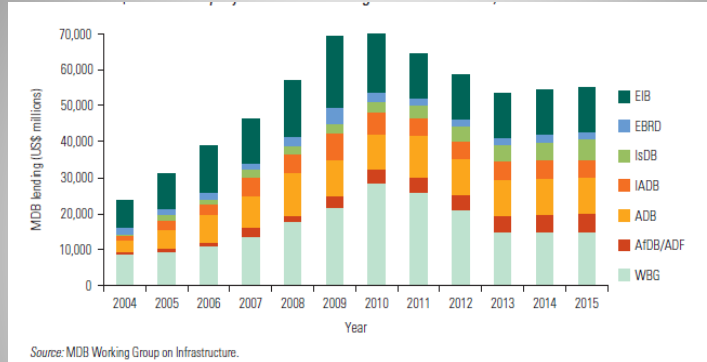


Source: UN ECOSOC 2014

Implementation of General Assembly resolution 67/226 on the quadrennial comprehensive policy review of operational activities for development of the United Nations system

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Multilateral Development Banks Lending for Infrastructure 2004-2015. What Next ? Clean Tech Transfers ?

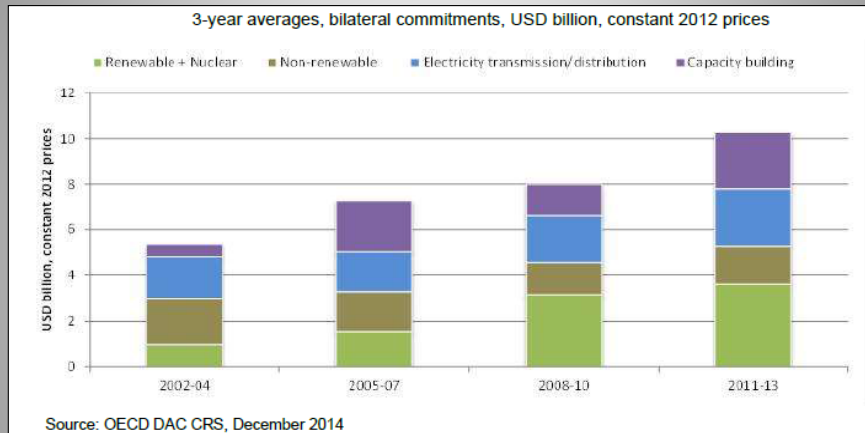


Note : Figures are before the creation of The New Development Bank/NDB BRICS in 2014 and implementation in 2015, and of the Asian International Infrastructure Bank (AIIB) in 2015.

VII BRICS Summit, “Ufa Declaration”, Ufa, the Russian Federation, 9 July 2015):
“We stress the importance of transfer of technology and scientific knowledge to address climate change and its adverse effects and therefore agreed to conduct joint research on the priority issues of common interest”.

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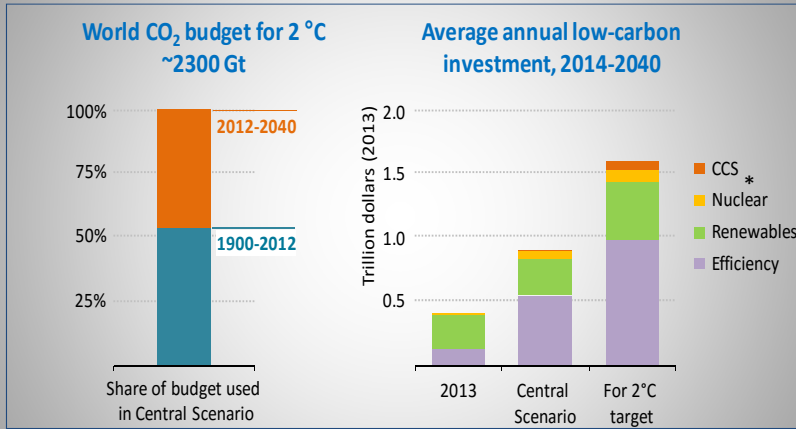
Official Bilateral Development Finance (ODA + OOF) targeting the Energy Sector



Share of Bilateral Development Finance up to 16% of total ODA in 2011-2013

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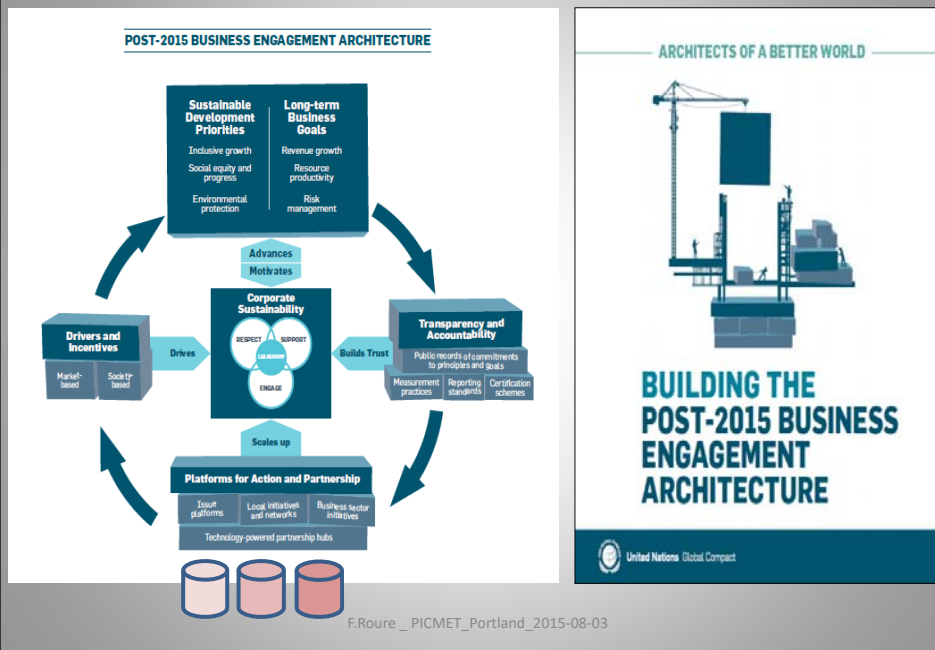
Trillion US\$ Investments/Year in the Global Climate and Energy Agendas. Involving Private Stakeholders in Technology Transfer, Dissemination and Implementation.



Source : AIE – WEO (2014) *CCS stands for Carbon Capture and Sequestration

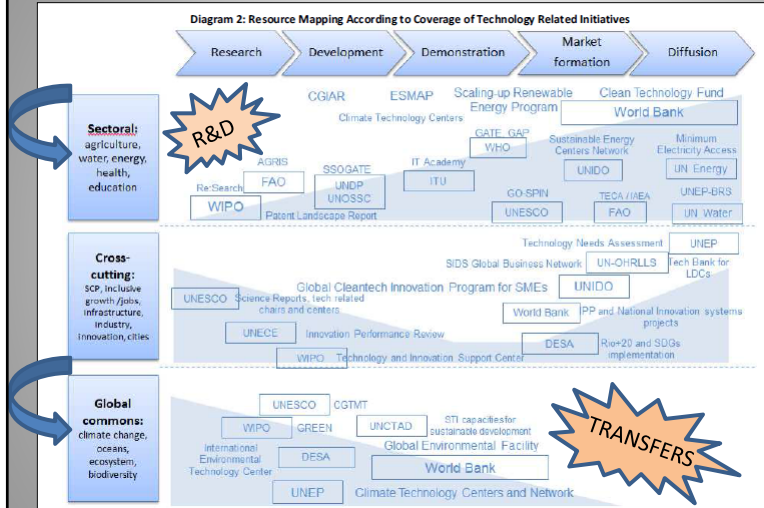
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Technology-Powered Partnership : Global Compact Post-2015



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Still Financial Gaps to bridge in Financing the Energy and Climate Change Technologies and their Transfers



Source : *IAWF Inter Agency Group on a Technology Facilitation Mechanism, Briefing 22 June 2015*

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« **Chronos and Kairos** » :
The Right Time to Act
In the Technology Age




Ideas are not set in Stone
When exposed to thoughtful People,
They morph and adapt
Into their most potent Form.


Sir Ken Robinson, TED Conference

https://www.youtube.com/watch?feature=player_embedded&v=cS5kN-onKg CopyWriter <http://www.christianewithac.com>

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DE L'INDUSTRIE, DE L'ÉNERGIE ET DES TECHNOLOGIES



**Addressing Technology Transfers
in the Global Climate and Energy Agendas
2015-2030**

THANK YOU FOR YOUR ATTENTION

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