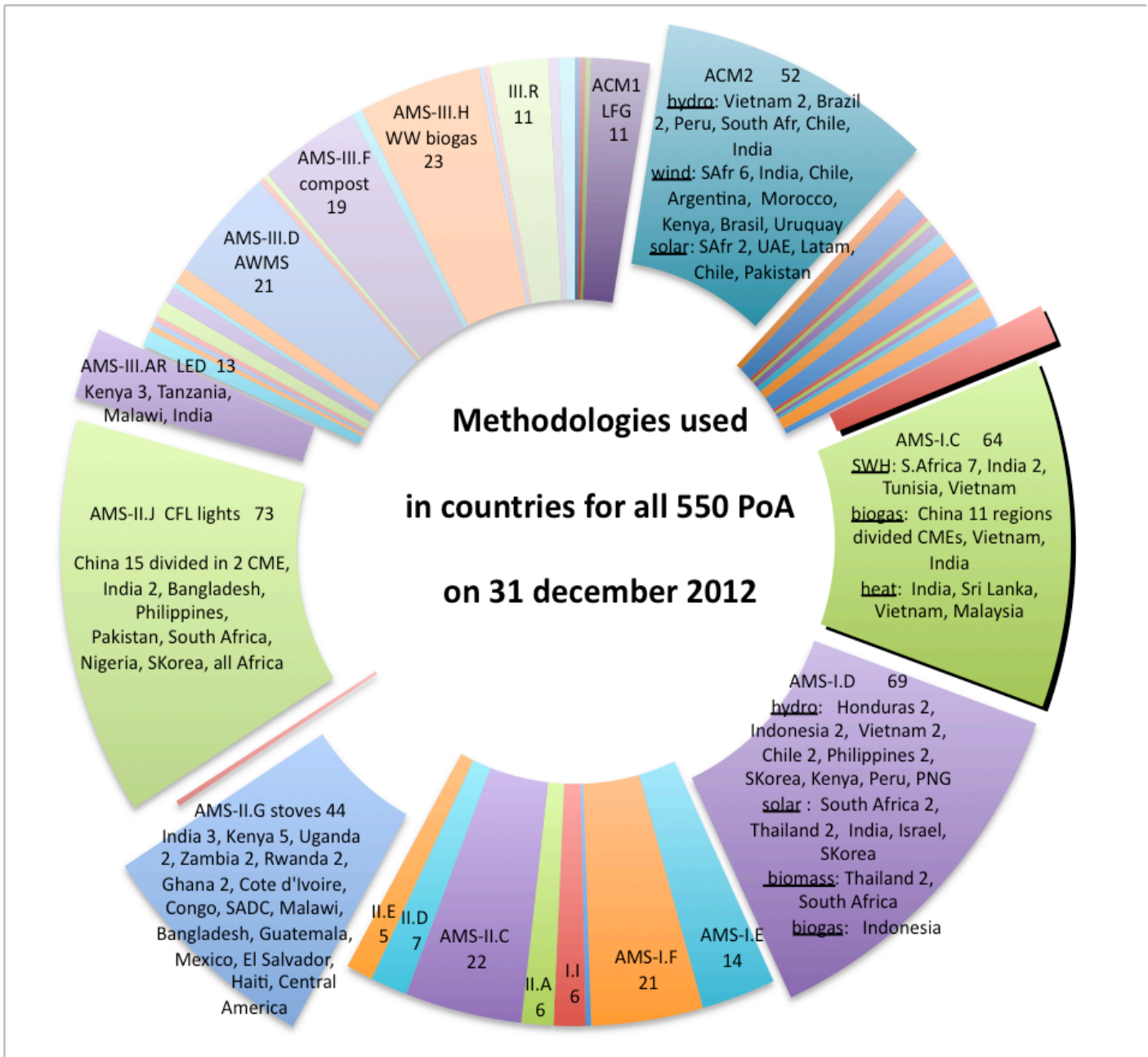


Programme of Activities published by end-2012



PoAs for CFL lights are the most popular with 73 PoA-DDs in preparation, while other household items such as stoves and SWH are also frequent. The countries listed are those PoA-DDs that appeared first in validation.

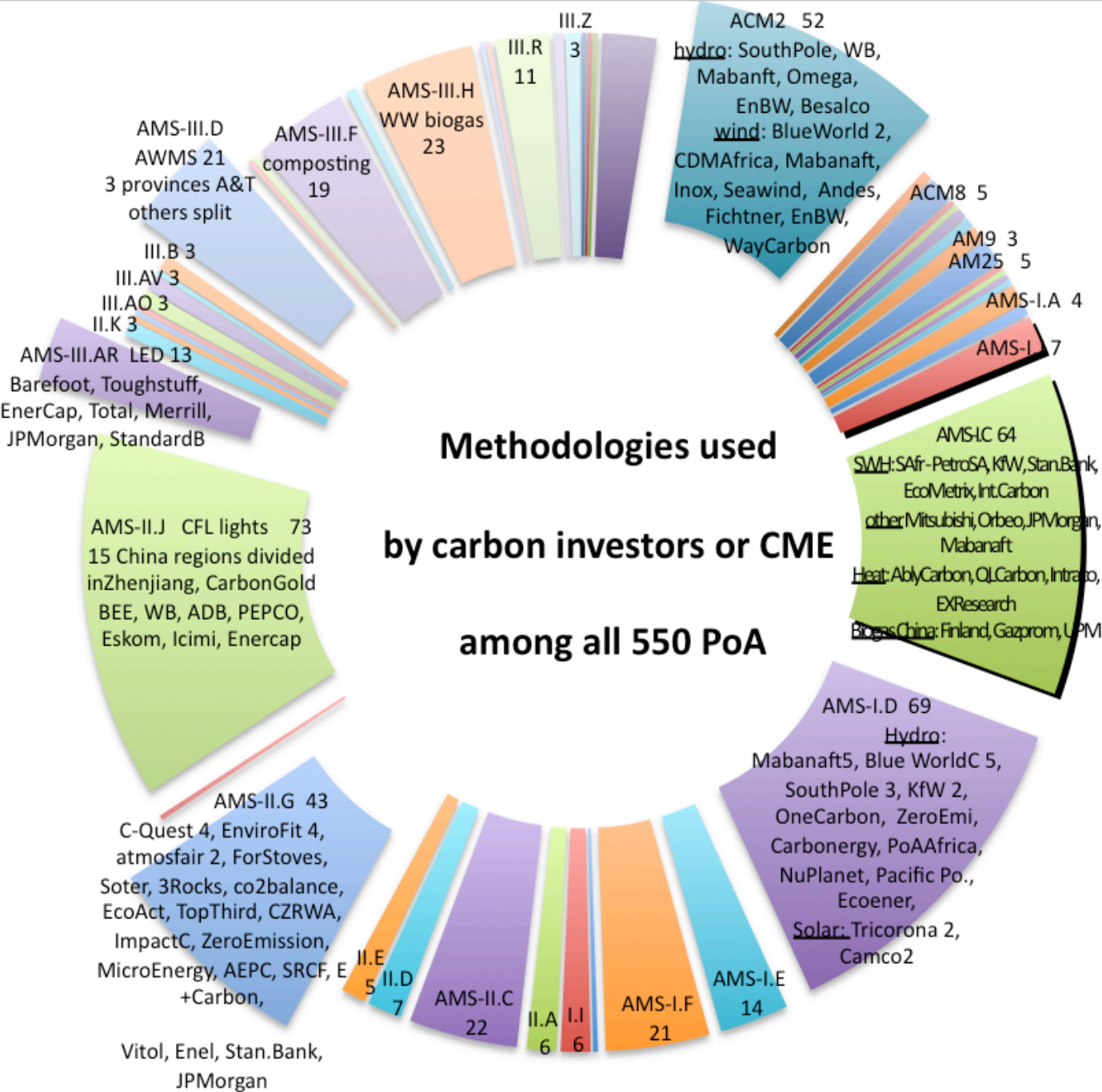
PoAs are more specific to countries' climate governance than single site CDM. In few countries competing PoAs pursue different "channel strategies" to reach households. As usual, China pragmatically divides regions among CMEs for CFL lights since operational lessons are transferable, whereas for biogas each region has a different CME to favour adaptation of CPA operations and biogas construction services. CFL and biogas are the focus in China.



Few carbon investors specialize in emission reduction types and operational risk differences are important. Some choose certain combinations motivated by lower aggregate risk and/or to assemble portfolios of carbon quality. China, Malaysia and Indonesia are the only countries where investors specialize.

- ❖ rare competition (SWH, stove) in Uganda and South Africa by national companies
- ❖ biomass is the only type with CME specialization (despite AgCert)
- ❖ all major investors diversify for regions and types
- ❖ few investors create separate PoAs of the same types thus there is more concern for transaction costs than for regulatory risk of a CPA blocking other CPA
- ❖ investors in renewables cover most technologies, and small and large scales

The following graph shows the same 550 PoAs grouped for methodologies and lists the respective investors of those PoA-DD that appeared first in validation.



PoA landscape as of 31-12-2011

The 165 PoAs until end of 2011 are categorized according to their main drivers using judgement of economic, technical and managerial aspects. Overall, the UNFCCC should undertake new policy initiatives to stimulate governments outside of SE Asia to engage in CDM and manufacturers/utilities/operators to use CDM for other equipment. Both are held back by bureaucratic inertia more than the CDM inherent incentives.

In the **“Carbon investor”** category PoAs are initiated, defined and driven by dedicated CDM companies, banks or energy commodity merchants

Mostly palm oil in SE Asia, biogas and AWMS in China, stoves in E Africa and small-scale hydro in Latin America. They pick what is best in each region and in parallel spread their standard wares such as CFL and wind. Innovation such as steel SME (SouthPole), water treatment (Vestergaard) and trigeneration (Promethium) is quite rare. In MENA and Brazil investors are absent because they are adverse to administrative risks.

Trend: when portfolio diversity is reached, cost differentials lead to specialization among investors according to costs of each country’s suppliers

“Manufacturer/utility/operators” create PoA for other economic motives than CO₂, for example selling equipment or offering non-energy services
(for instance Repsol an energy conglomerate is not a carbon investor)

So far only few, mainly chillers and AWMS, motivated by competition among them (they cover the same regions) when a small contribution to costs from CO₂ can result in a competitive advantage. This seems to be the case for the chiller manufacturers and also the livestock industry in Brazil.

Trend: cost parity for PV in some countries brings PV investor competition (was not possible in wind and hydro), other and new equipment types appear gradually

“Local government” comprises all governmental PoAs, Ministries, regional authorities or utility companies run by governments are Coordinating/Managing Entities (CMEs)

The CO₂ metric can resolve policy problems such as subsidized electricity rates not because of CERs but by the neutrality in the local political arena

SE Asia has many more because Philippines, Thailand, Vietnam have political contexts motivating increased services for low-income groups. Similarly the CFL PoAs initiated by governments aim to reduce investments in new powerplants.

Trend: present PoAs expand in each country and are increasingly focused on socio – economic groups, barriers for other governments remain high and sticky

“Non-profit/voluntary carbon” comprises the World Bank and NGOs such as Hivos, atmosfair, BORDA etc

These PoA are few, divers and innovative. Often they have operating parameters that will evolve and technology packages change in the future. Such exploration can bring carbon investors to follow. New user types are as frequent as are technology variations.

Trend: multiplication of types and NGOs



Each cell lists PoAs in the order as these appeared for validation, so the sequence indicates changing preferences (where a type is repeated these are separate PoA, with an “/” are types combined in one PoA).

Table: PoAs submitted for validation until end of 2011

	Carbon investor	Manufacturer / utility / operators	Local government	Non-profit, voluntary carbon
Southeast Asia	SWH, EFB/POME, SHP, SHP, EFB/POME, renew, biom.boiler, EFB, renew, EFBbiog, water tr., SHP, renew, SHP, POMEbiog, ww-biog, LFG, ww-biog, SHP	Stove, NH ₃ chiller, chiller, chiller, WHR, LED, LED, EFB/POME, biogas	Pigs, biogas, CFL, SHP, landfill, bricks, renew, biomass boiler, LED, chiller, SWH/PV, SHP, water mill, fluidized, SWH, ww-biogas	AWMS, MSW compost, SWH, pigs
China	CFL, CFL, CMM, geotherm, SHP, CFL, AWMS, biogas, poultry, AWMS, biogas, CMM, AWMS, turbine, AWMS, AWMS, MSW	AWMS	Biogas, biogas, biogas, CFL, CFL, SHP	Hydraulic rams, transformer
India, Pakistan, Bangladesh	Stove, SWH, biogas, SWH, PV/thermal, MSW compost, LED, SWH, steel, renew, stove, PV/CSP, LED, wind, stove, LED, PV	Biomass boiler, chiller, chiller, biogas, wood gasification	CFL, biogas, CFL, MSW, biogas, biogas, CFL	SHS, transformer, stove-water-PV
MENA			SWH, MSW, PV	Taxis, transformer
West Africa	Stove, stove, LED	SHP	CFL	
East Africa	Stove, water purif., stove, stove, LED, LED, stove, CFL, stove, stove, biogas, renew, stove		Renewables	MSW compost, stove, stove, stove, LED, biog.
Southern Africa	Wonderbag, SWH, LED, stove, LED, SWH, LED, SWH, SWH, trigenerat., light, PV, renew, PV, wind, refri, SHP, wind/hydro, wind/solar, wind, PV/thermal	SWH, SWH, AWMS, LFG	CFL	Stove
Brazil ^{FiT} Generation-based <30MW	SHP, wind	AWMS, AWMS, AWMS	MSW, LFG	
Central America ^{FiT} avoided costs	CFL, stove, stove, stove, SHP, SHP, SHP, renew, SHP, ww-biog, EFB/POME, SHP, AWMS, wind, hydro	SHP	Housing, AWMS	Teak A/R
non-Brazil Southern America	Light/refrigeration, SHP, LFG, wind	LPG, SHP		Stove

AWMS animal waste management system
 CFL compact fluorescent lamp
 CMM coal mine methane
 EFB/POME empty fruit bunches, palm oil mill effluent
 LED light emitting diode
 LFG liquefied natural gas
 LPG liquefied petroleum gas

MSW municipal solid waste
 PV photovoltaic cells
 SHP small hydro power
 SHS solar home system
 SWH solar water heater
 WHR waste heat recovery
 ww waste water



League of PoA Carbon Buyers

Mabanaft focus South Africa, India, Central America low delivery risk,
no LDC = supply security

India PV, Peru/Nicaragua wind, India LED, South Africa wind, South Africa LED, Central
America wastewater biogas, India wind, Brazil SHP, Central America SHP, Peru SHP,
Vietnam SHP, India SWH

Standard Bank focus all Africa, ease of CPA contracting, operation and monitoring,
non-CO₂ benefits = invest in CDM as instrument, esp. grid developm

India trigeneration, Kenya/Uganda/Ruanda all renewables, Asia-LA LED/CFL, Oceania
LED/CFL, Singapore Chiller, Eastern Africa CFL, Tanzania CFL, South Africa solar/wind,
South Africa refrigeration, 3 South Africa SWH, South Africa/Botswana/Ruanda lights

SouthPole focus regional and type coverage

Vietnam SHP, East Africa all renewables, Indonesia composting, Indonesia palm biogas,
Ghana/Nigeria stoves, Central America hydro, Thailand all renewables, Indonesia SHP,
India all renewables, India steel, world water filter, El Salvador stoves

JP Morgan focus energy poverty = sustainability and long-term growth

Uganda stove, India LED, Bangladesh stoves, South Africa Wonderbag, India SWH

ADB focus energy policy gaps in countries
Philippines CFL, PNG all renewables, Pakistan CFL, Rajasthan MSW, Nepal water mills,
Vietnam biogas

KfW
South African SWH, Chile SHP, Philippines chiller, Philippines SHP
only initially West Africa stove, Bangladesh biogas, SPEAR all ren, Nepal stove,

ATHoldings	all 6 China
GenPower	Indonesia bioas, Malaysia biomass, Colombia lights
Deutsche Bank	Brazil wind, Hunan geothermal, Henan geothermal
EnBW	Colombia landfill, Colombia biogas, Peru hydro
Mitsubishi	Vietnam SWH, Jiangxi CFL
Tricorona	Tanzania water purifier, Thailand PV
C-Quest	Nigeria stoves, Zambia stoves, Mexico stoves
MicroEnergy	India stove, Mongolia stove
Merrill Lynch	Kenya LED
Vitol	Congo stove
Camco	South Africa PV/thermal
First Climate	China LFG
Fichtner	Argentina wind
Bunge	Sichuan biogas
Santander	Mexico SHP

