Ilmasto- ja ympäristörahoitus – uusia mahdollisuuksia suomalaiselle osaamiselle ja viennille?

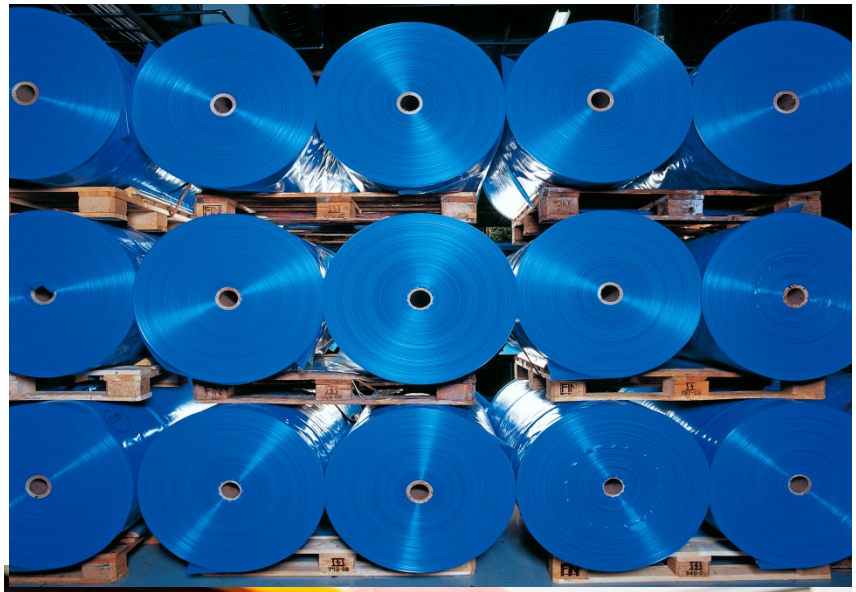
Kari Hämekoski
NEFCO

Ilmansuojelupäivät 23-24.8.2016
Lappeenranta

NEFCO in brief

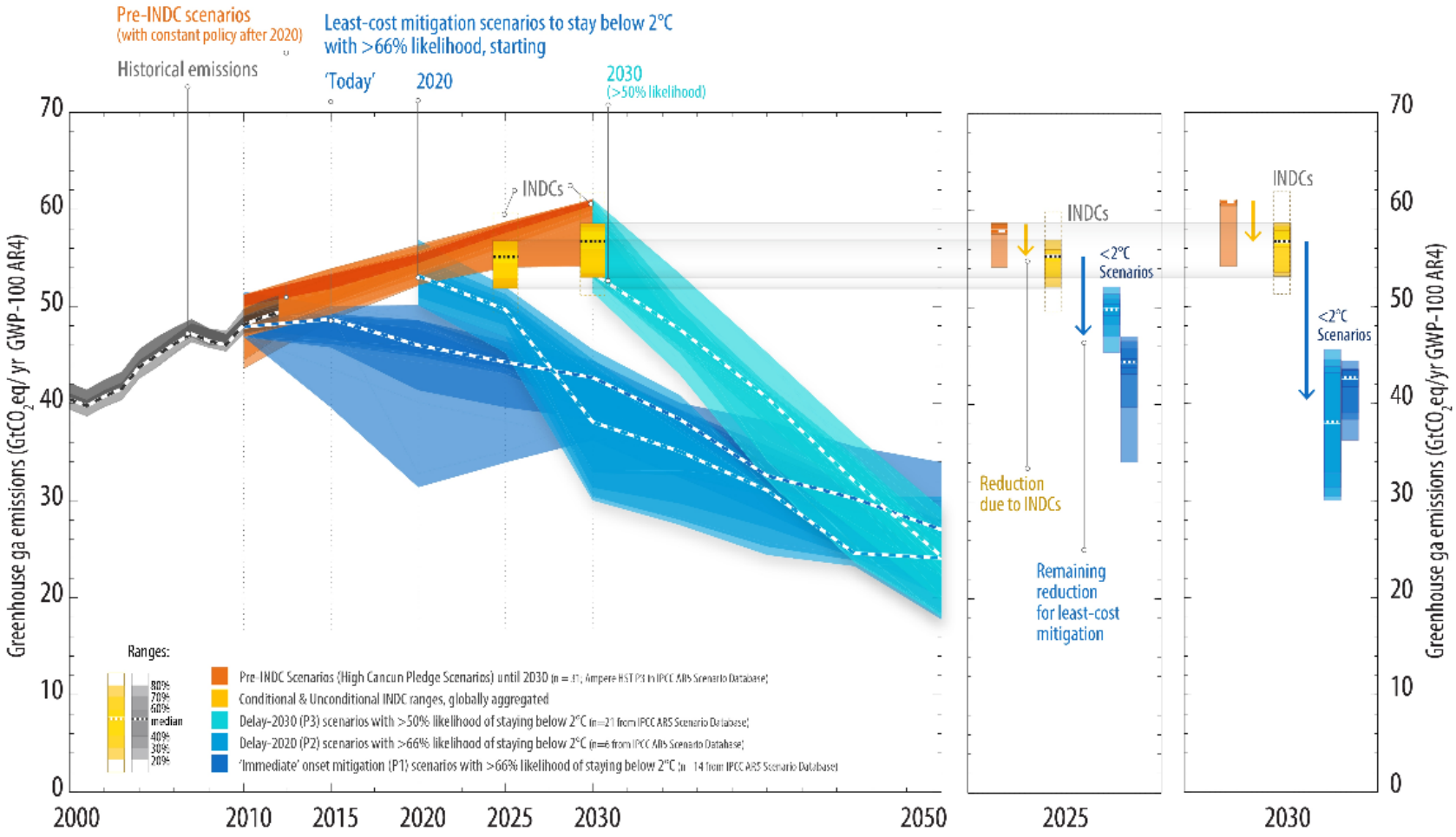
- International financial institution established by the Nordic countries
- Loans, equity investments for environmental projects in Eastern Europe
- Climate finance activities globally
  - carbon finance, climate finance
- 28 Funds, total value of EUR 500 million
- Headquartered in Helsinki with 30 employees

NEFCO Case: Production of plastics in Kaluga, Russia



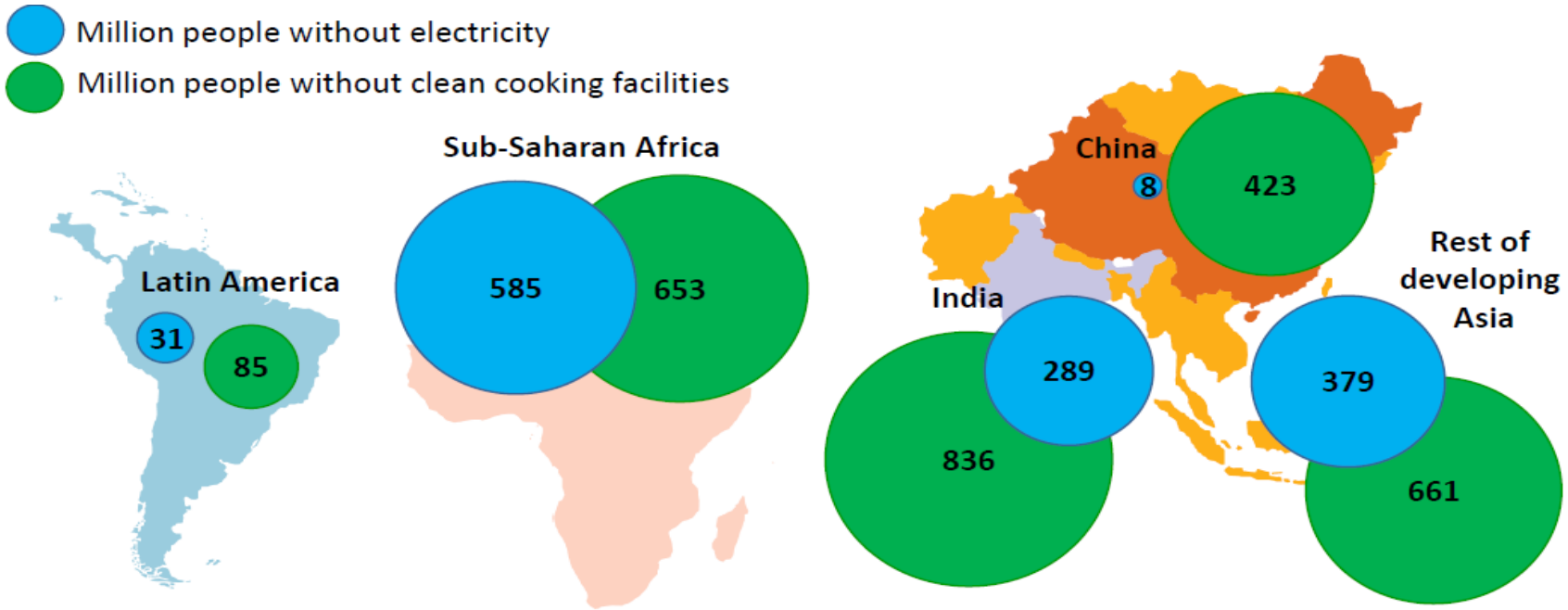
- Rani Plast's new factory in Kaluga produces plastics as packaging material for the Russian market.
- Financiers: Rani Plast, EBRD, Finnfund, NEFCO
- Environmental benefits: Closed loop saves raw material, polyethylen instead of PVC-plastics, energy efficient production
- CO_2-reduction: 10,750 tonnes per year

Emission trends - effects Intended Nationally Determined Contributions (INDC)



UNFCCC 2015

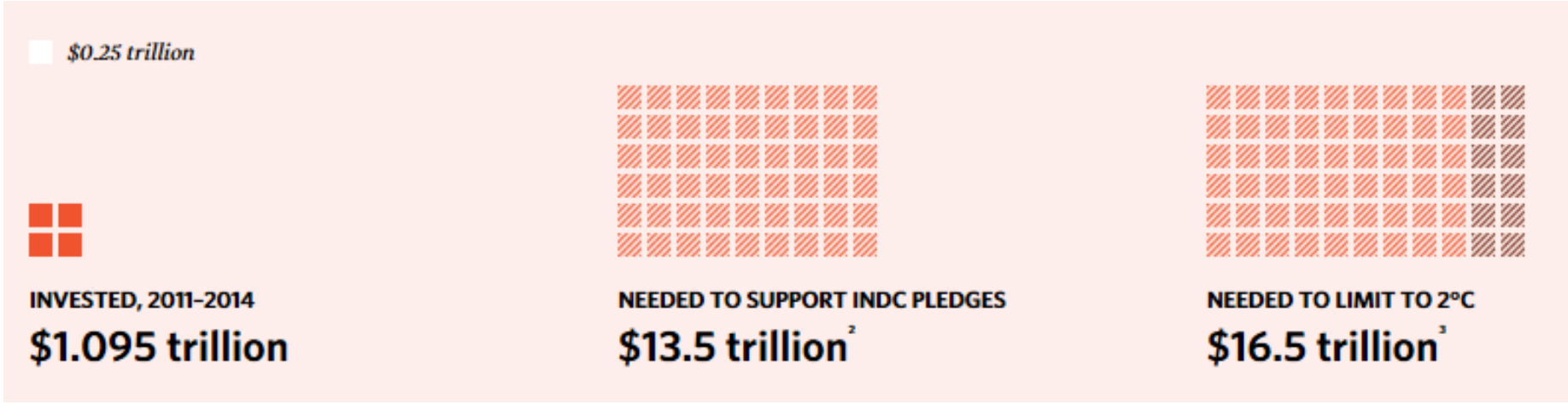
Energy Poverty



1.3 billion people in the world live without electricity and 2.7 billion live without clean cooking facilities

Source: OECD/IEA (2011)

Investment needs



Climate Policy Initiative 2015

Estimating the Costs of Climate Change

- Some estimates of climate change financing needs of developing countries are as follow:
  - Mitigation: **$500 billion to 1100 billion/year** (UNFCC, 2009; World Bank report 2010; UNDESA (WESS, 2010)
  - Adaptation**: $100 billion to $450 billion/year** (UNFCC 2007; World Bank 2010; Parry et al. (2009)

Some key UNFCCC decisions and actions on climate finance

- 2007-COP13 Bali Road Map: launching of the Adaptation Fund
- 2009-COP 15 Copenhagen: Copenhagen Accord– Short term-finance = 30 billion USD for 2010-2012 (Fast start) + Mobilisation of 100 USD billion a year by 2020 to address developing countries needs.
- 2010-COP 16 Cancun – Cancun Agreements: Establishment of a Green Climate Fund to scale –up long term Finance for developing countries.
- 2014-COP 20 Lima: Pledges made by both developed and developing countries prior to and during the COP that took the capitalization of the new Green Climate Fund past an initial $10 billion target, a total of USD 10.2 billion from 27 countries.

Climate Finance in Paris Agreement

- Developed countries to support developing countries and to inform about it:
  - COP-decision: 100 billion USD per year to be mobilized 2020 – 2025
  - covers both public and private finance and various sources
  - Indications biennially, in particular on public finance, guidelines to be developed
  - Ex-post reporting in particular on finance, where public intervention involved, guidelines to be developed
- For other Parties, support and reporting voluntary
  - COP-decision: prior to 2025 a new, collective target > 100 billion USD
- Definition?

Sources of Climate Finance

- Public funding (multilateral/bilateral funds)
- EU
- National climate funds
- Private-public partnership initiatives
- Private funding ("climate business", green bonds etc.)
- Market-based instruments (“carbon markets”)

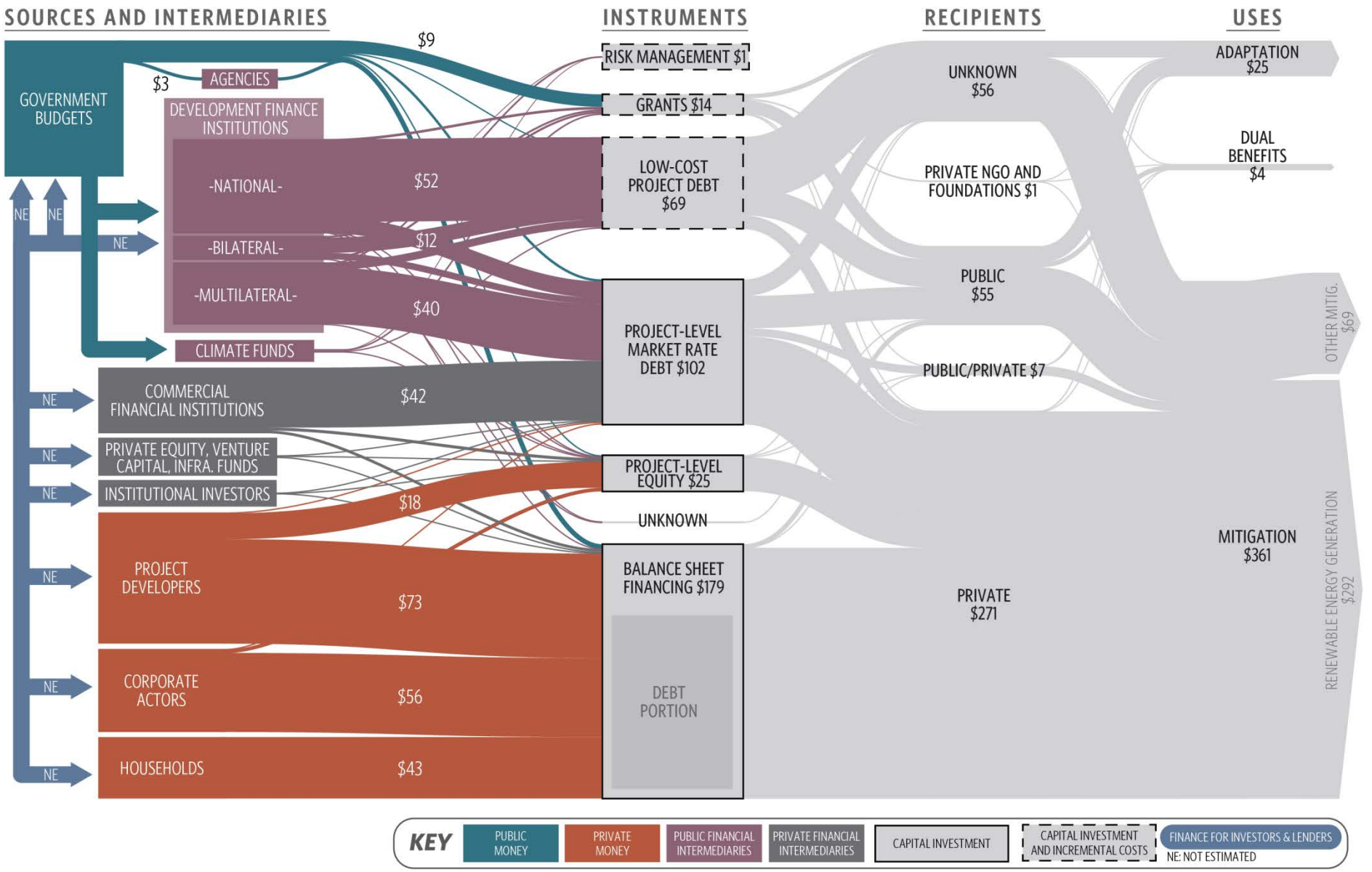
- Finnish/Finland based actors (climate/environment related): NIB, NEFCO, NDF, Formin (EEP), Finnfund…

GLOBAL LANDSCAPE OF CLIMATE FINANCE 2015

USD 391 BN TOTAL

CLIMATE POLICY INITIATIVE

Landscape of Climate Finance 2015 illustrates climate finance flows along their life cycle for the latest year available, mostly 2014, in USD billions



KEY

PUBLIC MONEY | PRIVATE MONEY | PUBLIC FINANCIAL INTERMEDIARIES | PRIVATE FINANCIAL INTERMEDIARIES | CAPITAL INVESTMENT | CAPITAL INVESTMENT AND INCREMENTAL COSTS | FINANCE FOR INVESTORS & LENDERS

NE: NOT ESTIMATED

Multilateral development banks 1/3 (examples)

- **European Investment Bank** aims to increase from 25% to 35% of annual commitments for climate change by 2020

- **Asian Development Bank** will double its annual climate financing to $6 billion by 2020, up from the current $3 billion.
  - $4 billion will be dedicated to mitigation through scaling up support for renewable energy, energy efficiency, sustainable transport, and building smart cities.
  - $2 billion will be for adaptation through more resilient infrastructure, climate-smart agriculture, and better preparation for climate-related disasters.

Multilateral development banks 2/3

- **European Bank for Reconstruction and Developme**nt is aiming for green financing to total some €18 billion over the next five years (as much green financing in the next five years as it has in the last ten).

- **Inter-American Development Bank** would increase the percentage climate finance from the current 14% to between 25 and 30% over the next five years, which will roughly double the current amount going towards climate projects.

- **African Development Bank** would triple its climate financing to nearly $5 billion a year by 2020. Half of the $5 billion will be dedicated to mitigation projects and the other half to adaptation projects.

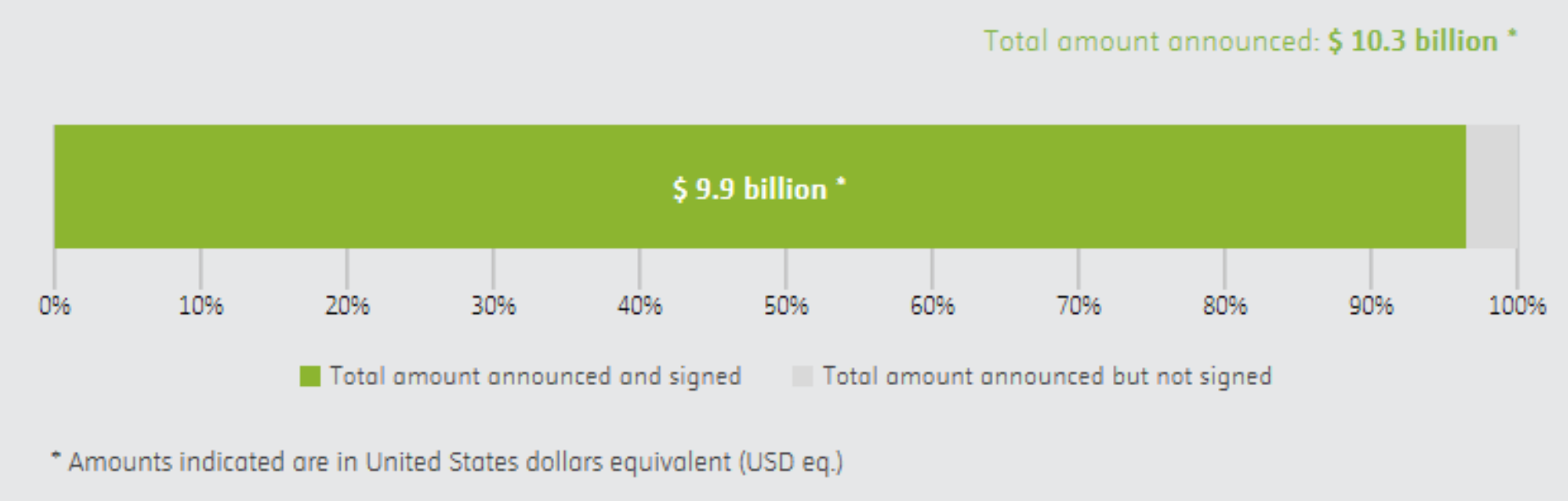
Multilateral development banks 3/3

- **World Bank's** climate financing could rise to 28 percent in 2020 in response to client demand, representing a one-third increase in climate financing.
- **World Bank Group** now provides an average of $10.3 billion a year in direct financing for climate action.
- If current financing levels were maintained, this would mean an increase to $16 billion in 2020.
- In addition, the Bank Group plans to continue current levels of leveraging co-financing for climate-related projects; at current financing levels, that could mean up to another $13 billion a year in 2020.

EU International Climate Finance

- At least **20% of the EU budget** will be spent on climate action by 2020.
- At least **€14 billion**, an average of €2 billion per year, of **public grants** will support activities in developing countries between 2014 and 2020.
- Compared to the average level in 2012-2013, funding for international climate action will **more than double**.
- The EU and its Member States exceeded their commitment to provide €7.2 billion in **"fast start finance" over 2010-2012** for immediate action on the ground in developing countries. Despite difficult economic circumstances, they provided **€7.34 billion**.

Green Climate Fund (1): Pledges and Contributions to GCF, August. 2016



Green Climate Fund (2)

- Multilateral fund, established by 194 countries that are Parties to the UNFCCC in 2010.
- To promote, within the context of sustainable development, the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to help limit or reduce their greenhouse gas emissions and to adapt to the unavoidable impacts of climate change.
- Funds are to be new, additional to previous flows, adequate, predictable, and sustained, and are to come from a wide variety of sources, both public and private, bilateral and multilateral, including alternative sources of finance.

Green Climate Fund (3)

- Channels its resources through **accredited** public and private implementing entities.
- Recipient countries can determine their mode of access – direct (through subnational, national or regional entities) or through international institutions
- Readiness and preparatory support will be available.
- Not only a paradigm towards lower emissions, but equally a paradigm shift towards climate resilient development pathways.
- Aims to achieve an equal allocation of its resources towards mitigation and adaptation, while ensuring that at least half of the funding for adaptation is for the vulnerable countries

- GFC approved the first projects in 2015

Green Climate Fund, approved projects 2015 (1)

- **Building Resilience of Wetlands**, Peru (USD 6.2M Grant) - Enhancing the climate resilience and livelihoods of the indigenous wetlands communities in the Amazon basin, while reducing greenhouse gas emissions from deforestation.
- **Scaling Up the Use of Modernized Climate Information and Early Warning Systems** in Malawi (USD 12.3M Grant) -Protecting lives and livelihoods in Malawi from climate-related disasters by providing early warning weather and climate information systems and improving the resilience of vulnerable communities.
- **Increasing the Resilience of Ecosystems and Communities** through the restoration of the productive bases of salinized lands in Senegal (USD 7.6M Grant) - Restoring salinized lands through improved knowledge and planning, and implementing measures such as hydraulic works, reforestation, anti-soil erosion systems, and use of adapted agriculture.
- **Climate-Resilient Infrastructure Mainstreaming** in Bangladesh (USD 40M Grant) - Providing cyclone shelters and safeguarding critical road access to protect lives in a rural, coastal region of Bangladesh. Developing urban infrastructure, safeguarding vulnerable city-dwellers from climate risk.

Green Climate Fund, approved projects 2015 (2)

- **KawiSafi Ventures Fund** in East Africa (USD 20M Equity, USD 5M Grant) - Creating a new investment fund, KawiSafi, to drive off-grid solar power in East Africa.
- **Energy Efficiency Green Bonds** in Latin America and the Caribbean (USD 20M Guarantees, USD 2M Grant) - Providing an alternative financing source for energy efficiency (EE) projects through the use of green bonds. The bonds will finance EE projects below 30 MWh in size, opening them up to new investors by pooling and securitizing them. The Fund further allocated up to USD 195 million to loans and guarantees towards scaling up and replication of the pilot phase.
- **Supporting Vulnerable Communities** in Maldives (USD 23.6M Grant) - Providing safe and secure freshwater to 105,000 people.
- **Urban Water Supply and Wastewater Management** in Fiji (USD 31M Grant) -Building and renovating infrastructure to improve access to safe water and sewerage systems.

Already proven emissions-reducing solutions that can be scaled up to deliver substantial and rapid emission reductions

Renewable energy

- **Solar water heating (China)**
- **Grid solar power (Germany)**
- **Off-grid solar power (Bangladesh)**
- **Wind power (Denmark)**
- **Wind power (Brazil)**
- **Bioenergy for heating (Finland)**

Transport

- **Vehicle fuel efficiency (EU)**
- **Bus rapid transit (Colombia)**

Buildings and households

- **Building efficiency (Germany)**
- **Building efficiency (Mexico)**
- **Improved cook stoves (China)**
- **Appliance efficiency (Japan)**

Industry

- **Industry energy efficiency (China)**
- **Industrial electric motors (USA)**
- **Reducing CH4 from oil and gas (USA)**

Agriculture and forests

- **Low-carbon agriculture (Brazil)**
- **Reducing deforestation (Brazil)**
- **Afforestation and reforestation (Costa Rica)**
- **Cutting food waste (Denmark)**

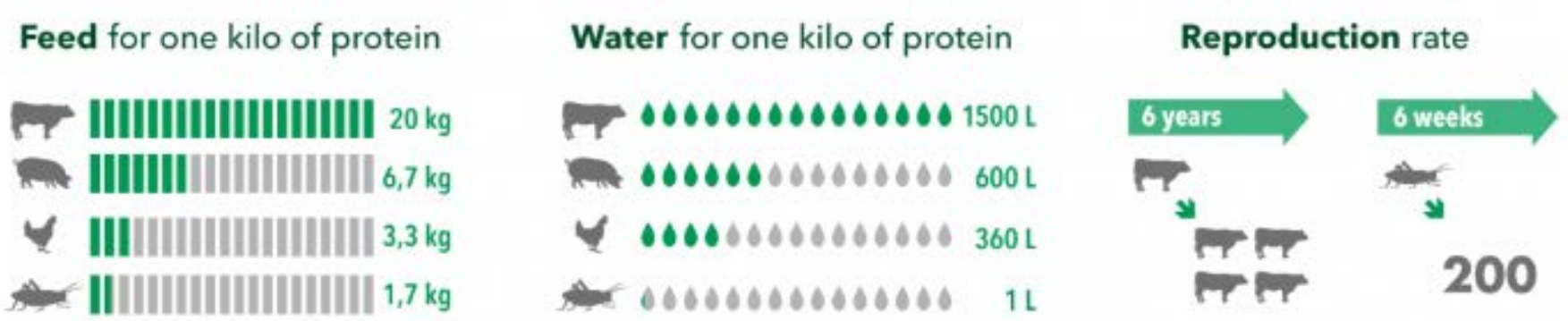
Sitra 2015

11 Suomen lupaavinta ilmastoratkaisua 2016

- **ReKindle** muuttaa kotitalouksien biojätteet biokaasuksi.
- **Smart Hybrid Generator** rakentaa uusiutuviin pohjautuvaa kokonaisvaltaista energiajärjestelmää sähkökatkoksista kärsiville alueille.
- **Pre-treatment unit of biowaste** muuttaa taloudellisesti tehokkaasti biojätteen liikkumiseen, lämmitykseen ja sähköntuotantoon sopivaksi energiaksi.
- **Super synthetic stones** valmistaa rakennusmateriaaleja muovijätteestä ja betonista.
- **Sustainable Meal** auttaa ravintoloita ja tapahtumanjärjestäjiä luomaan kestäviä ruokapalveluita.
- **Then – have more by owning less** tekee vaatteiden omistamisen turhaa tarjoamalla alustan vuokrattavalle muodille.
- **VisionAir** on valokuvaukseen perustuva ilman epäpuhtauksien monitorointi-innovaatio.
- **CarbonToSoil** edistää hiilin varastoimista maaperään verkkoalustan avulla.
- **Padurn** kerää ja integroi dataa, jota tarvitaan resurssitehokkuuden lisäämiseksi rakennuksissa sekä edistämään jakamis- ja kiertotalouden ratkaisuja.
- **Fire & Water** on Saas (software as a service) työkalu, joka mahdollistaa ennakoivan analyysin kemikaalien käytöstä vesitaloudessa sekä biomassan laadusta energiateollisudessa.

Demos Helsinki 2016

Crickets are high in protein…



http://www.entocube.com/

Planned annual battery production capacity of 35 GWh
To drive down the per kWh cost of the battery pack by more than 30%
To be powered by renewable energy sources, with the goal of achieving net zero energy.

Kiitos!