Efficacité Energétique dans les Villes
Expériences Internationales

IPEEC: Partenariat International pour l'Efficacité Energétique

Dakar, 19 et 20 Octobre 2015

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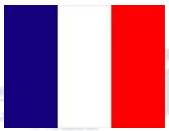
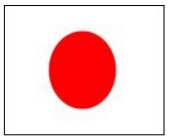
International Partnership for Energy Efficiency Cooperation

IPEEC Members are Major Economies


Australia


France


Japan


Russian Federation


Brazil

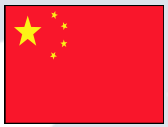

Germany


Mexico


South Africa


Canada


India

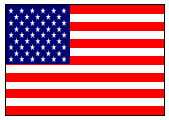

China


United Kingdom


European Union


Italy


Republic of Korea


United States of America

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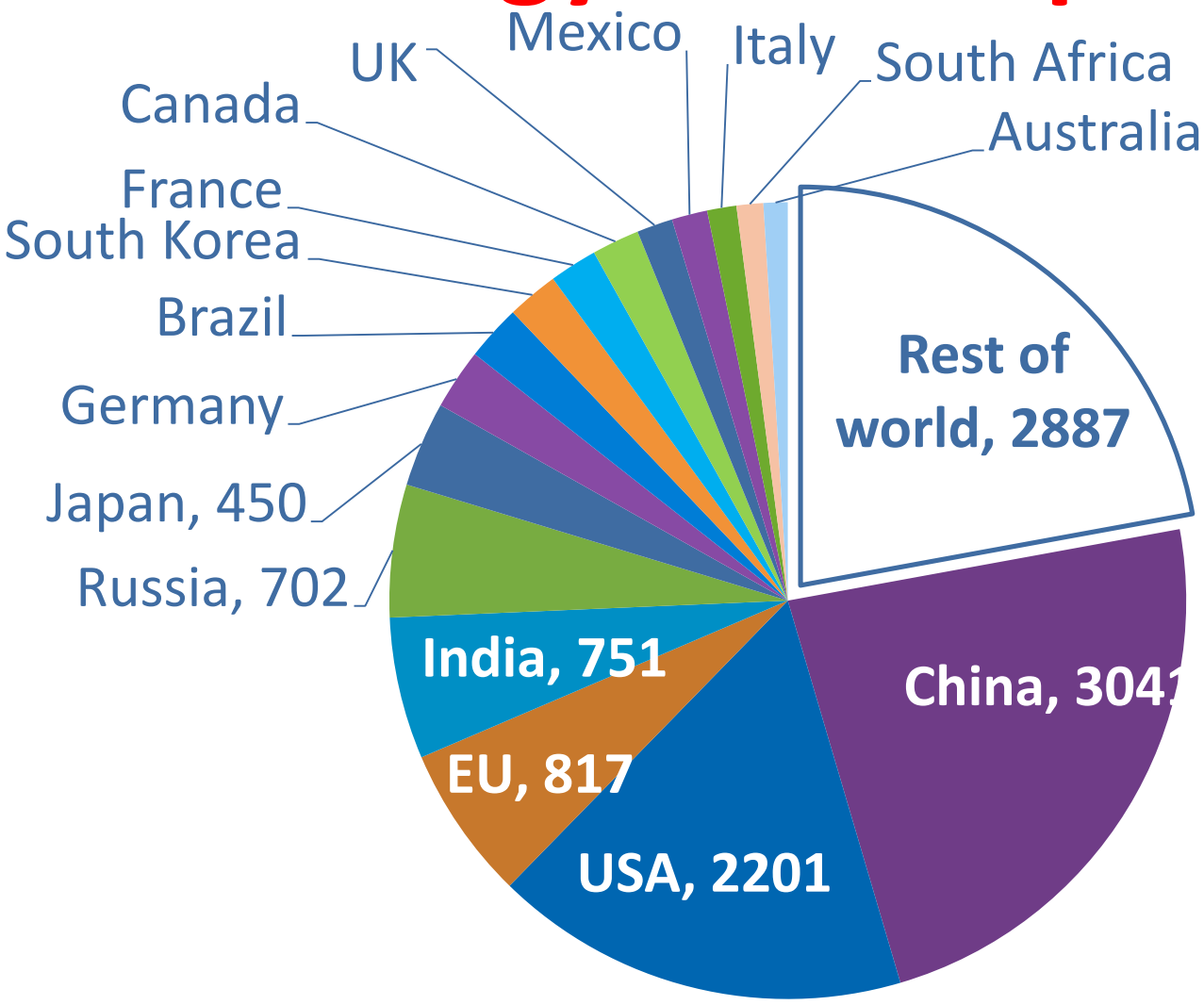
IPEEC Countries : >75% of World Energy Consumption



Global Energy Consumption (Source: IPEEI)

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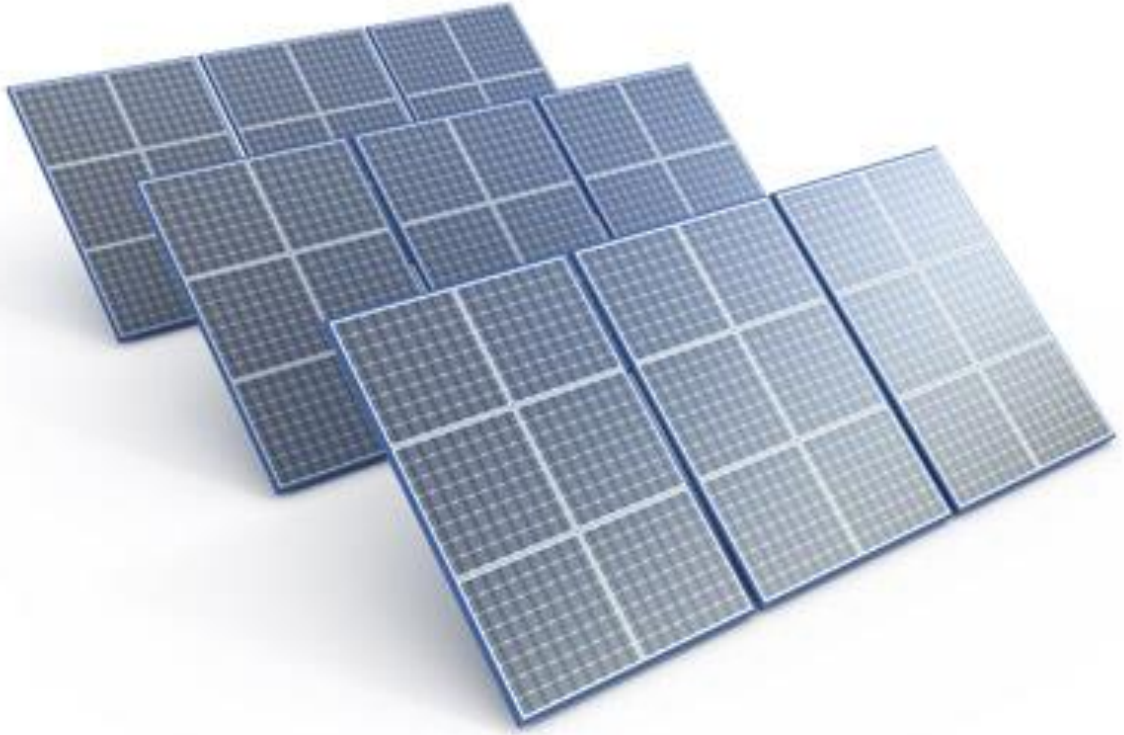
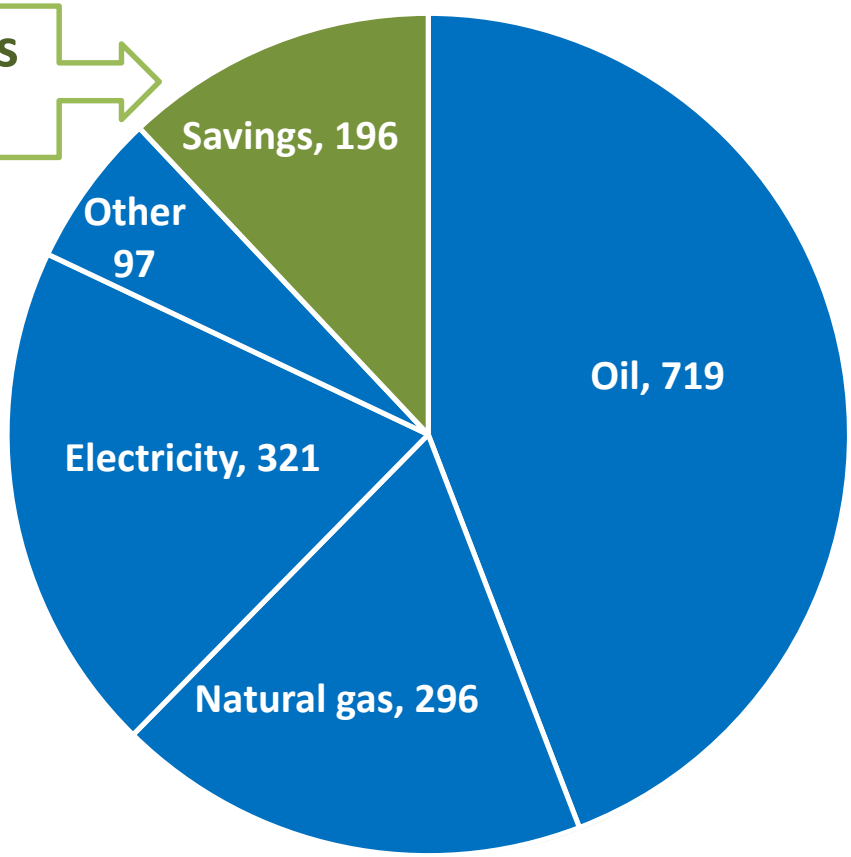



A
B
C
D
E
F
G

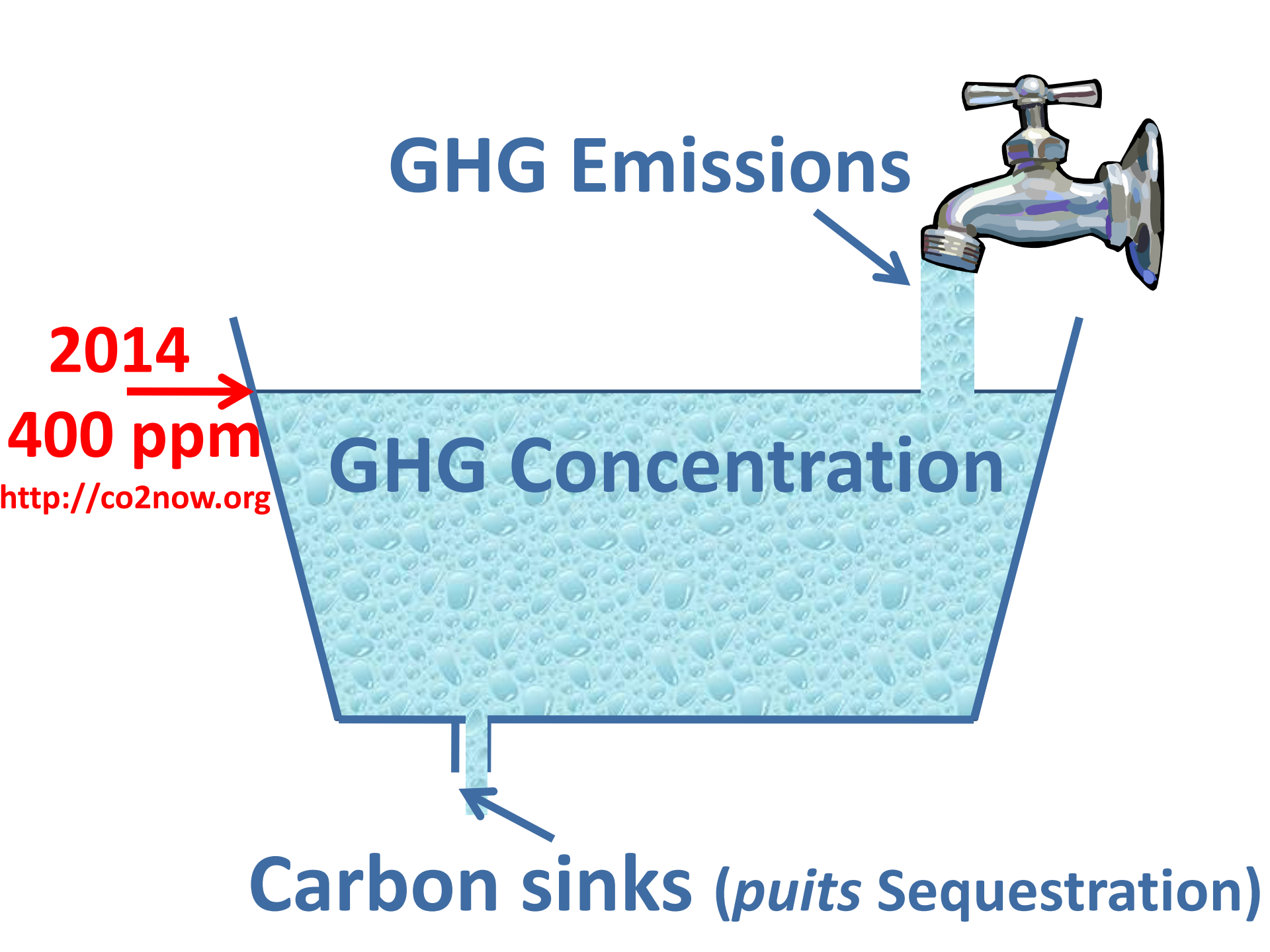
Energy Efficiency: a Homegrown fuel in the USA

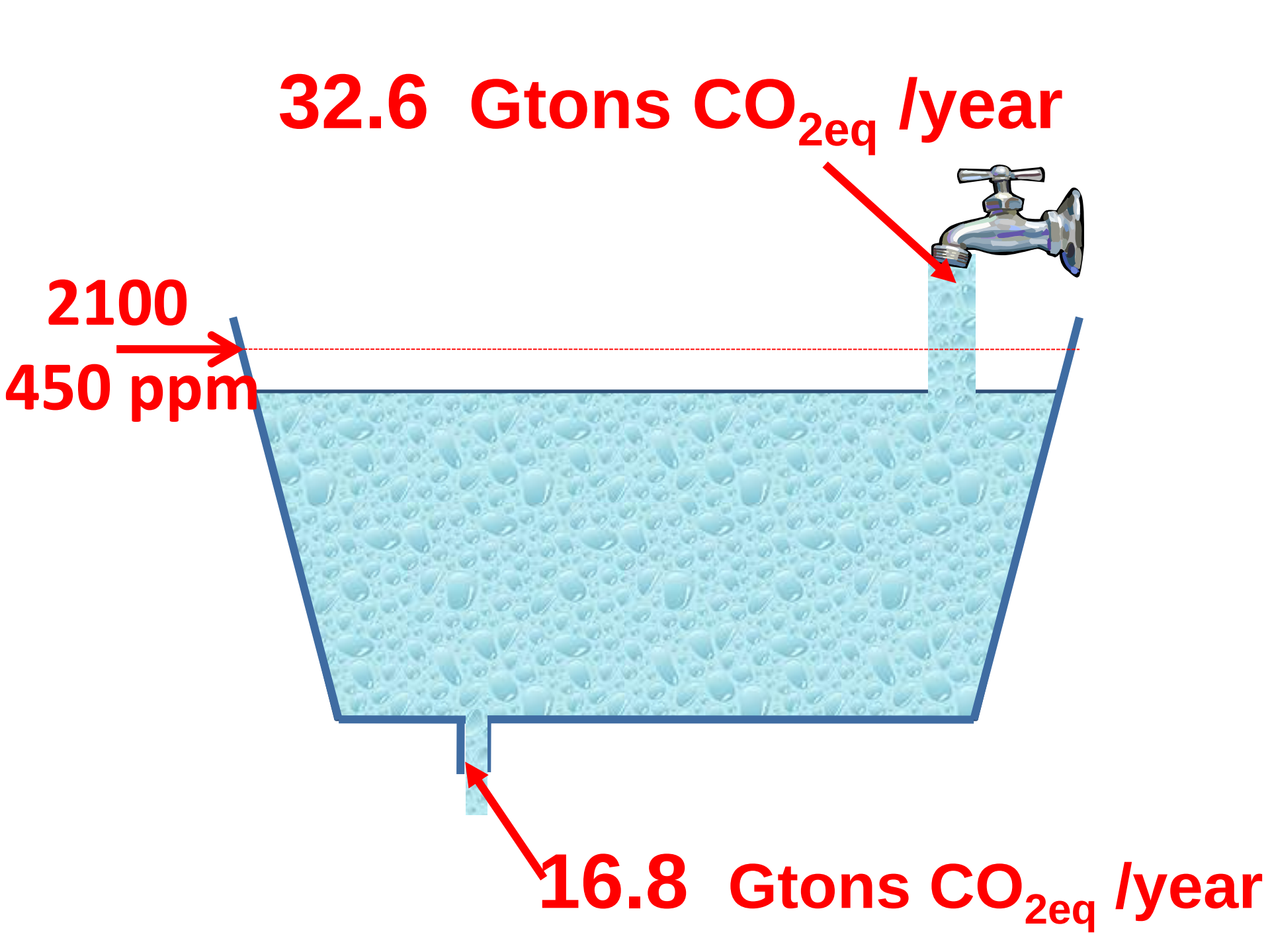
Total EE savings = 196 Mtoe

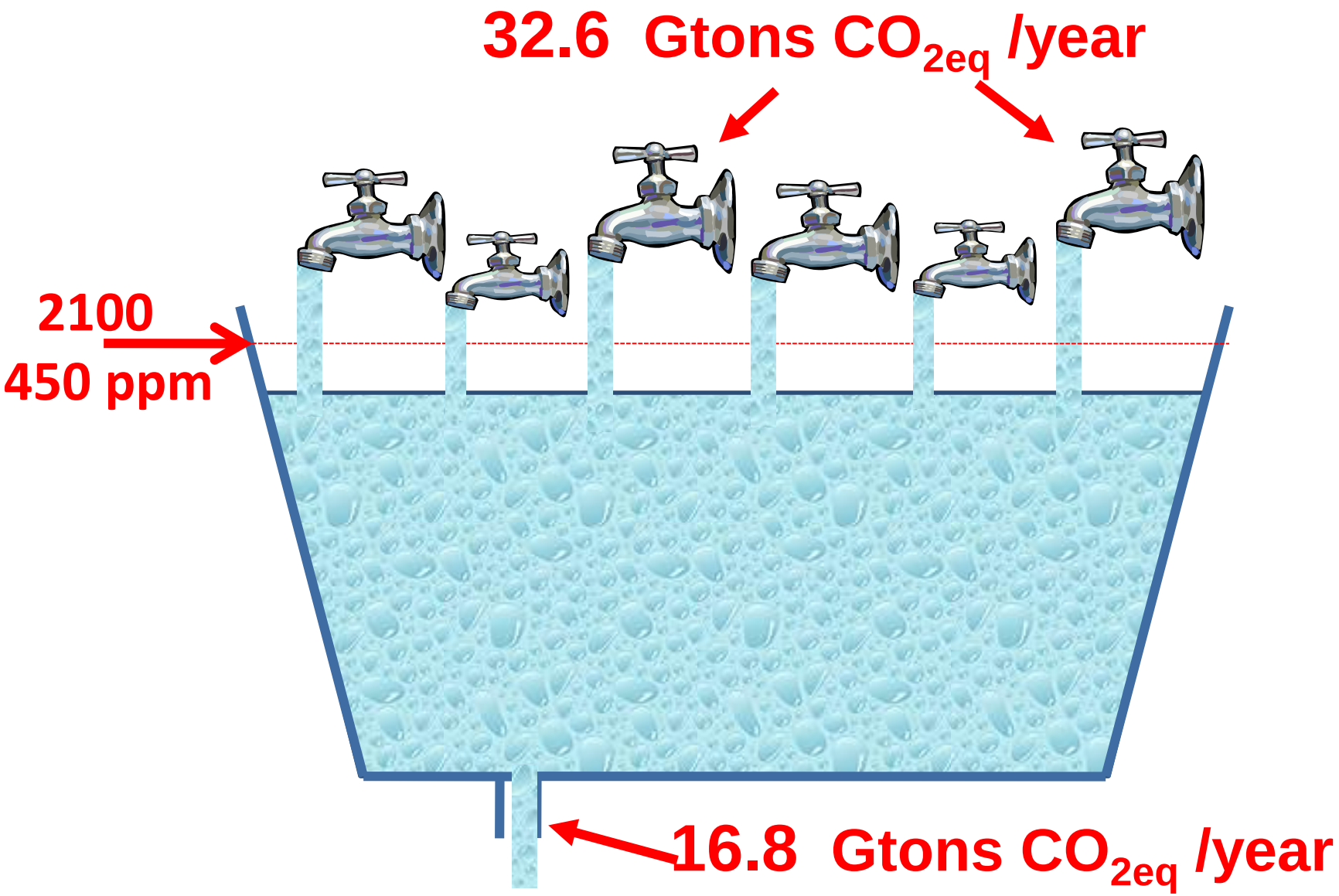


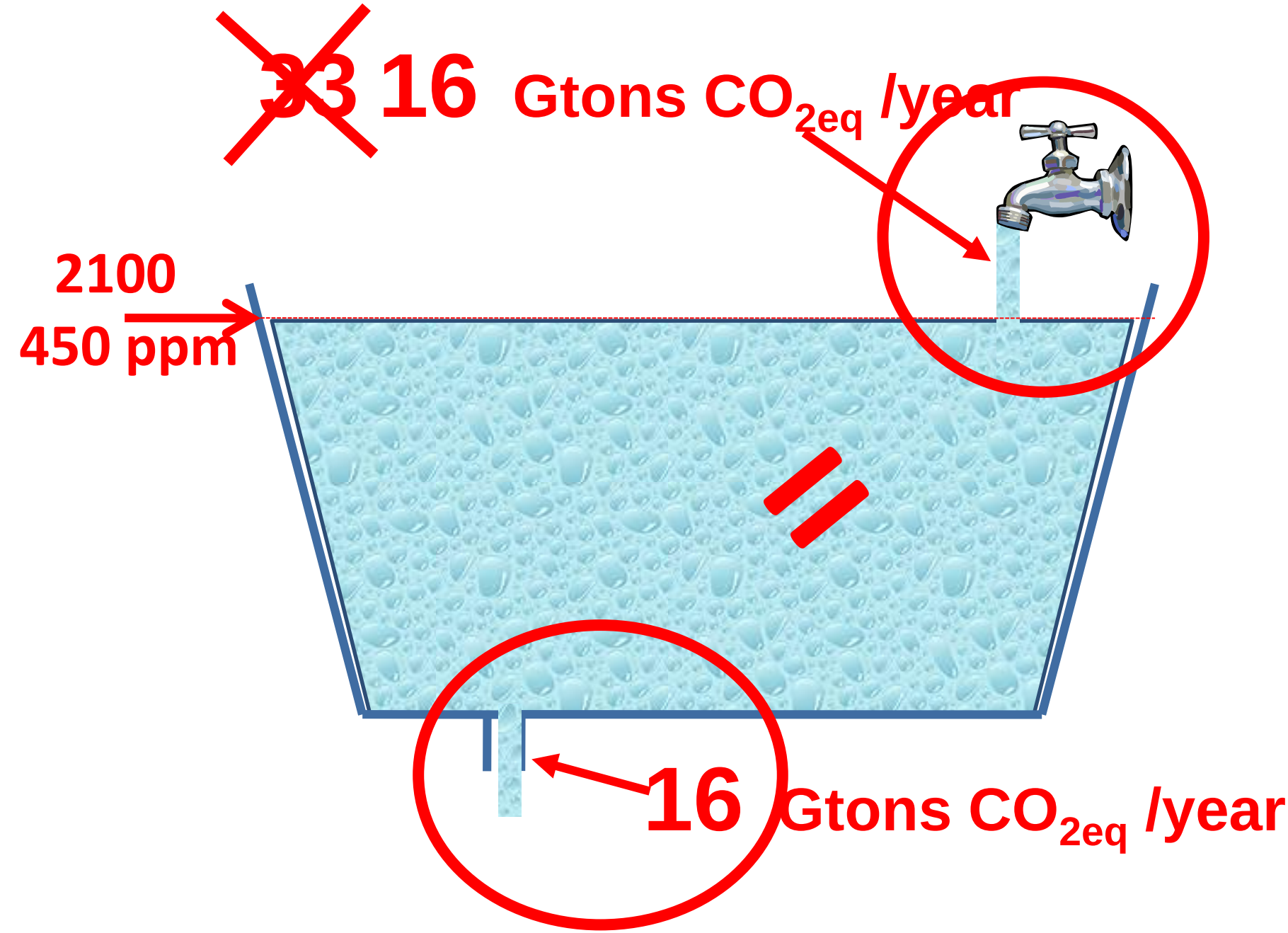
Total TFC = 1,432 Mtoe

Total TFC (EE adjusted)= **1,629 Mtoe**

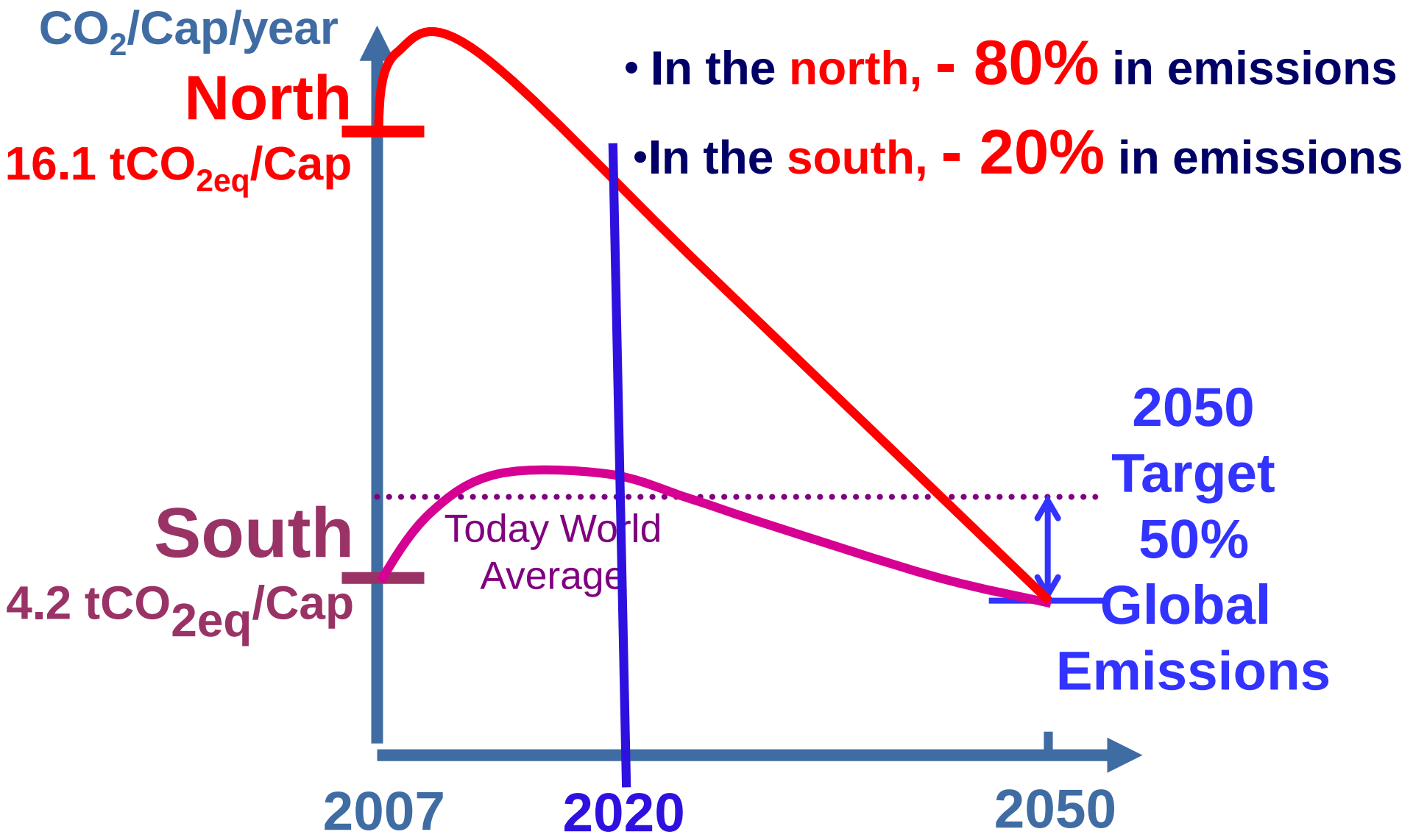

GHG Emissions
2014
400 ppm
http://co2now.org
GHG Concentration
Carbon sinks (*puits* Sequestration)


32.6 Gtons CO_{2eq} /year
2100
450 ppm
16.8 Gtons CO_{2eq} /year

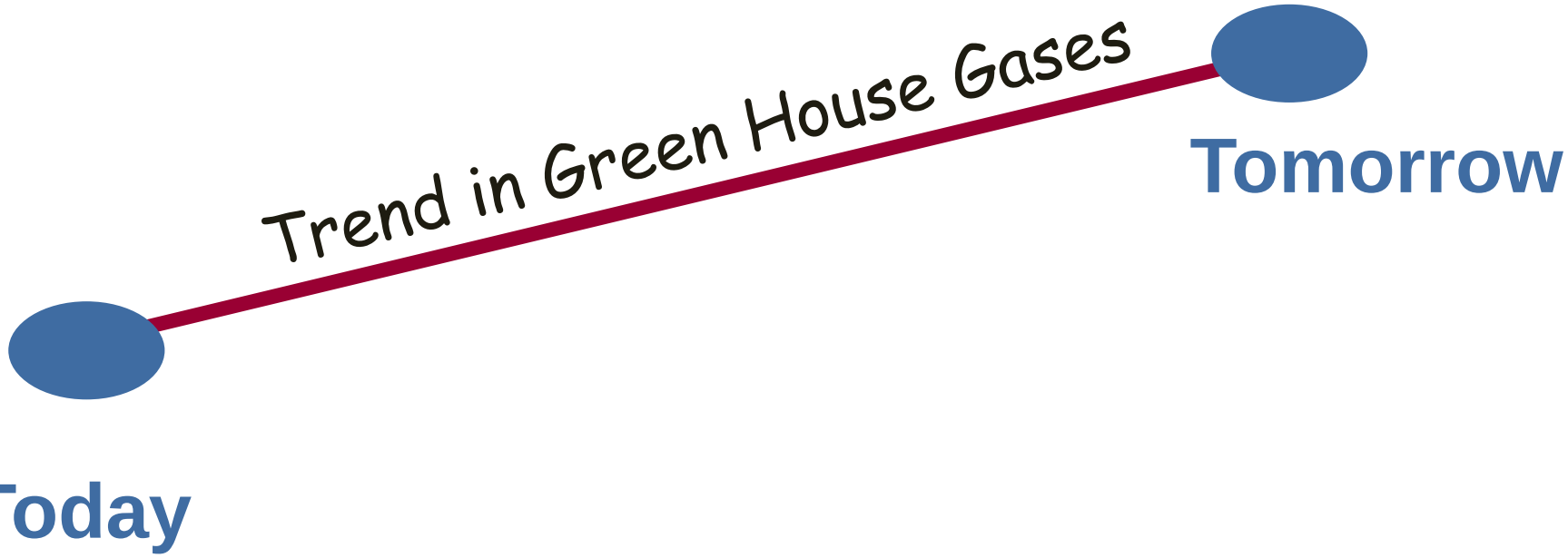

32.6 Gtons CO_{2eq} /year
2100
450 ppm
16.8 Gtons CO_{2eq} /year


~~33~~ 16 Gtons CO_{2eq} /year
2100
450 ppm
16 Gtons CO_{2eq} /year

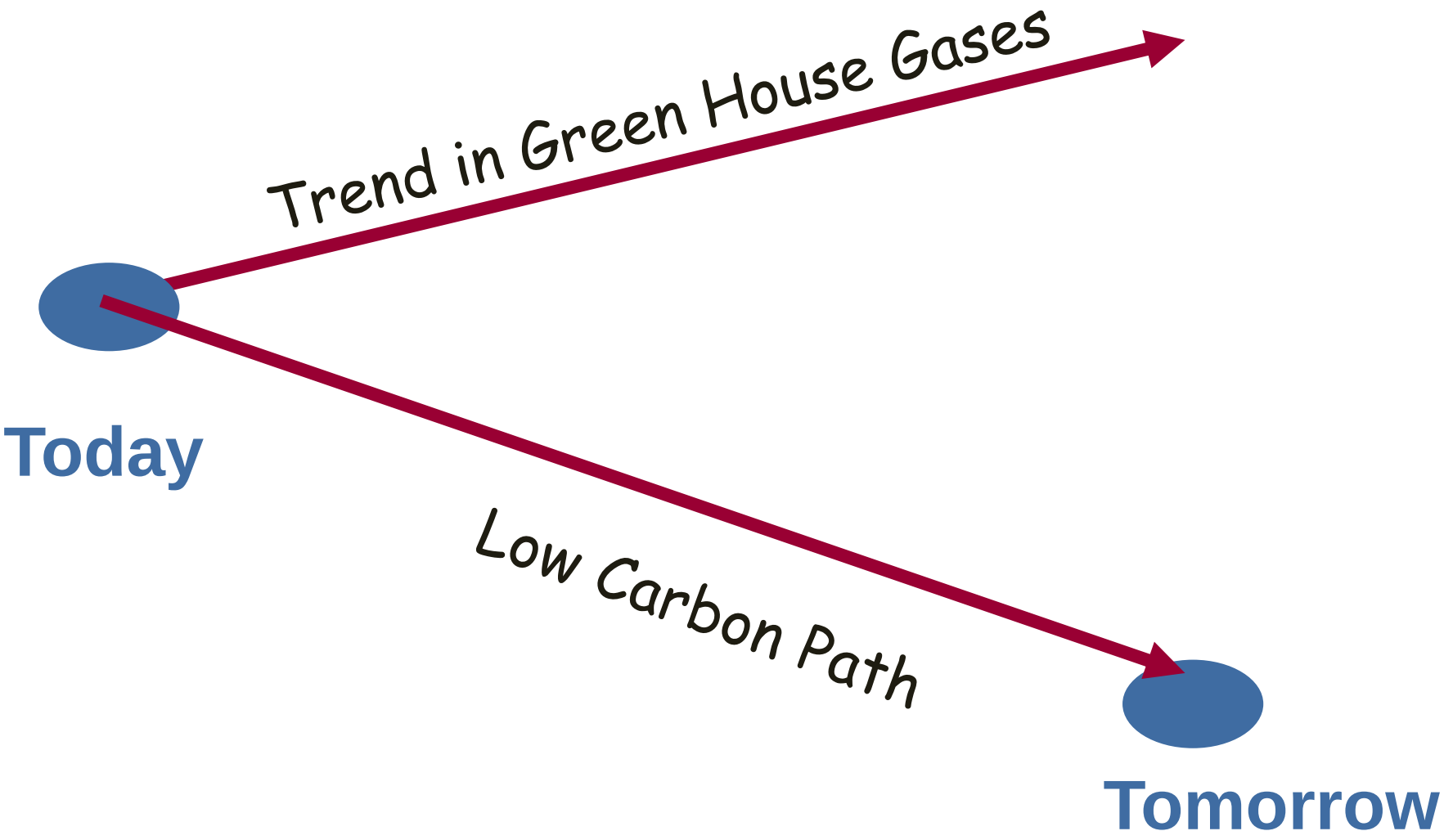
Pathway towards a 2°C Global Warming



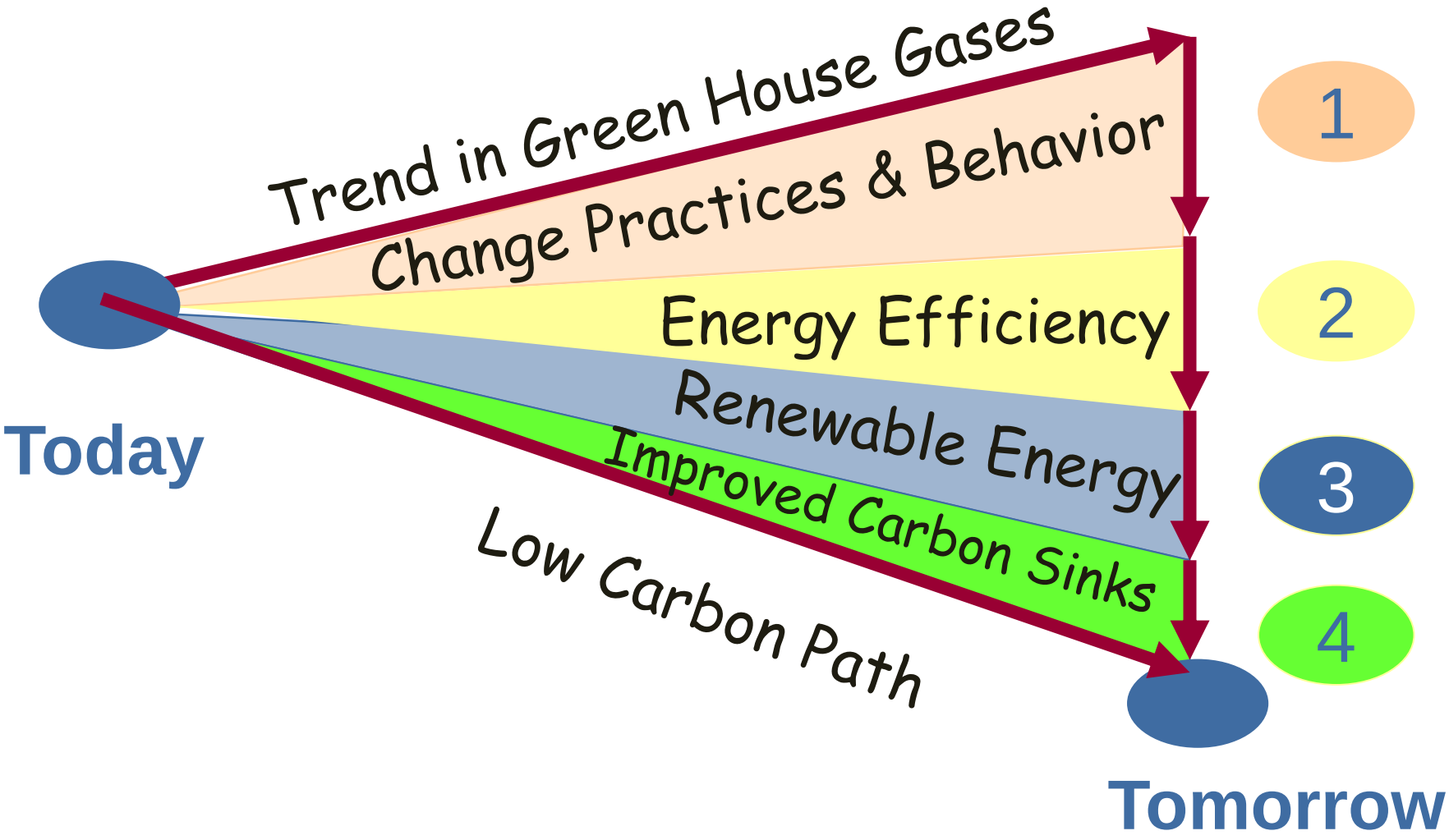
Four wedges for a low carbon development



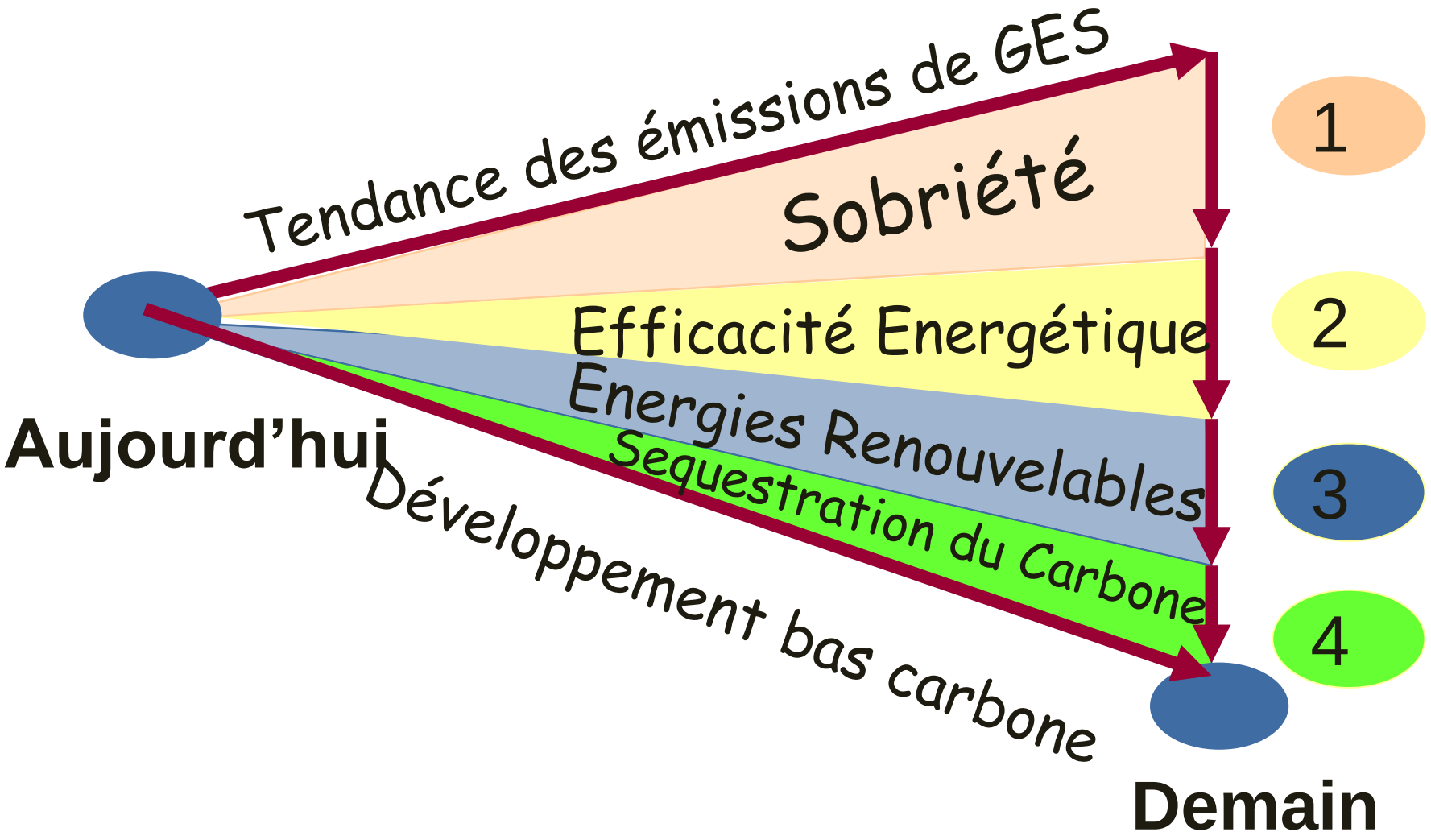
Four wedges for a low carbon development



Four wedges for a low carbon development



Réduire les Gaz à Effet de Serre en 4 étapes



Mitigation Measures

More efficient use of energy

Greater use of low-carbon and no-carbon energy

- Many of these technologies exist today

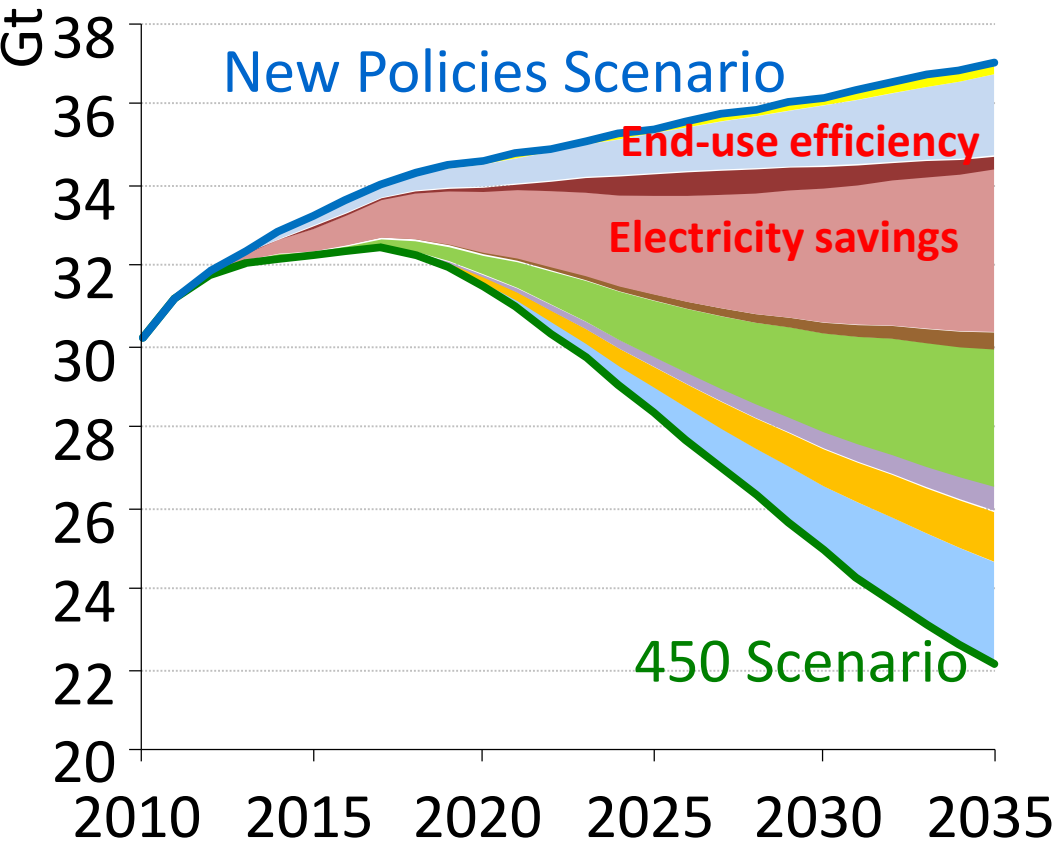
Improved carbon sinks

- Reduced deforestation and improved forest management and planting of new forests
- Bio-energy with carbon capture and storage

Lifestyle and behavioural changes

AR5 WGII SPM

Global energy-related CO_2 emissions abatement in the 450 Scenario



CO_2 abatement	2020	2035
Activity	2%	2%
End-use efficiency	18%	13%
Power plant efficiency	3%	2%
Electricity savings	50%	27%
Fuel and technology switching in end-uses	2%	3%
Renewables	15%	23%
Biofuels	2%	4%
Nuclear	5%	8%
CCS	4%	17%
Total (Gt CO_2)	**3.1**	**15.0**

Source: IEA World Energy Outlook 2012

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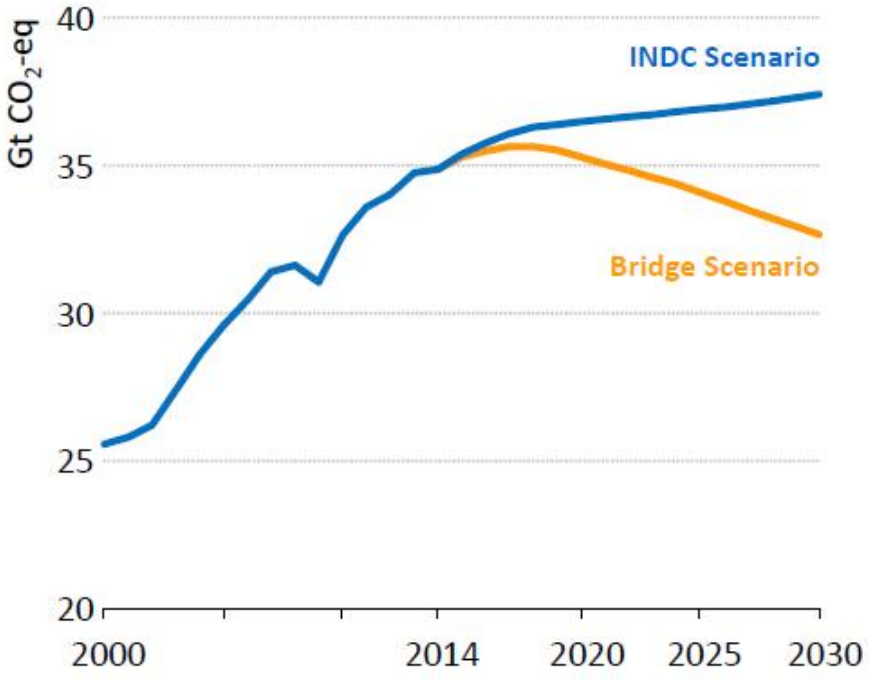
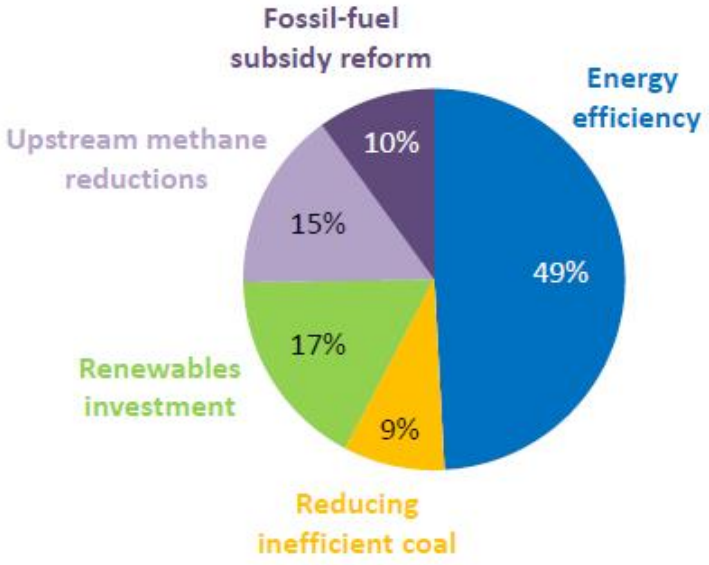
1. Peak in emissions:
IEA strategy to raise climate ambition

WEO Special Report on Energy & Climate Change

Global energy-related GHG emissions

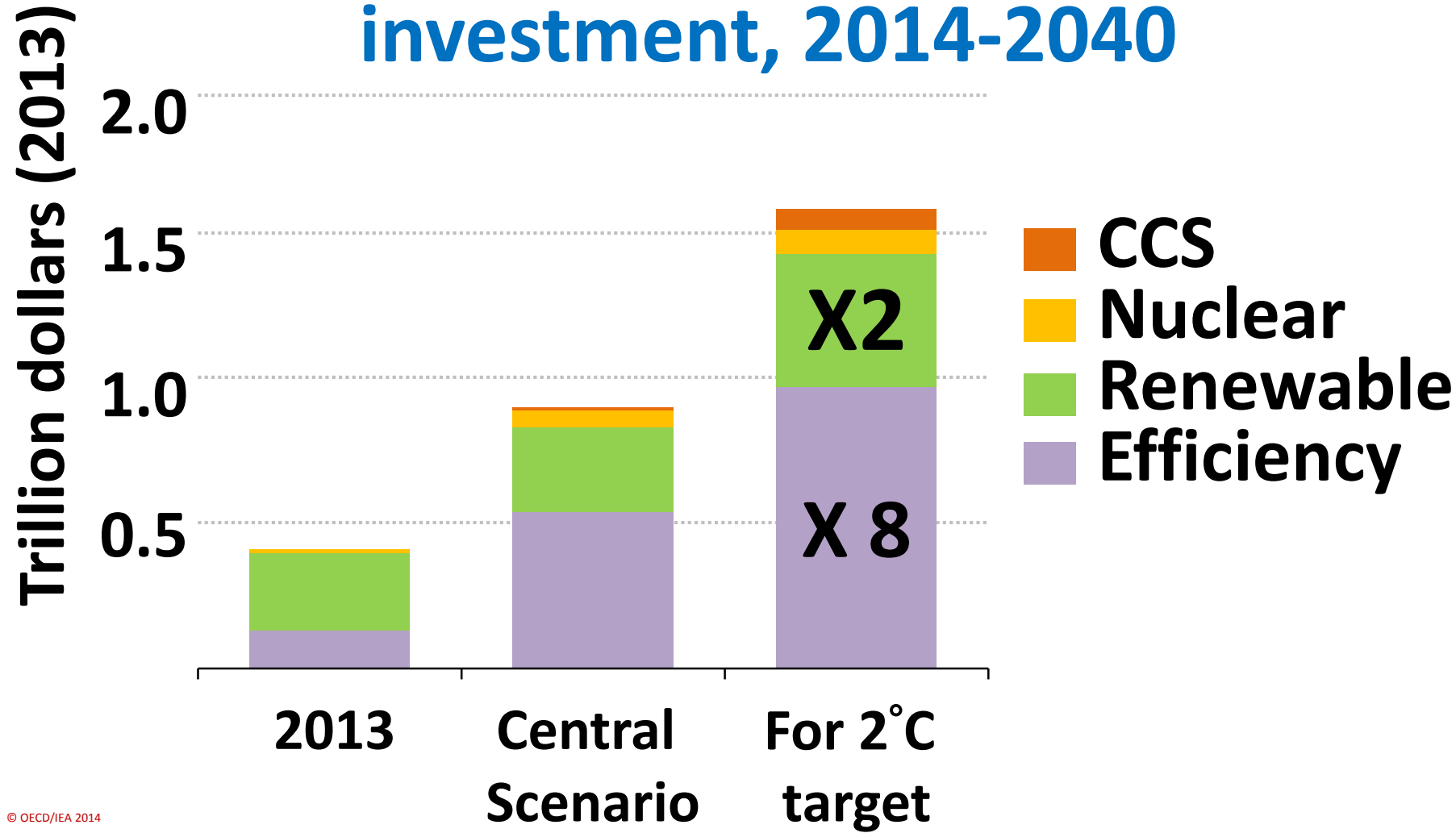


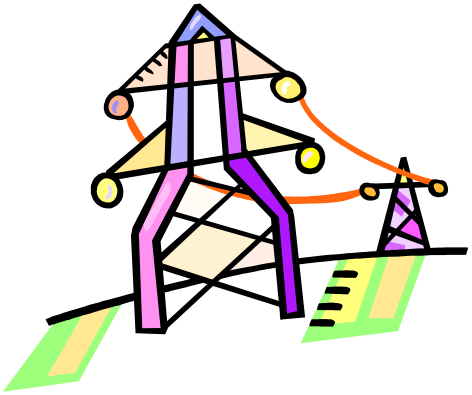
Savings by measure, 2030



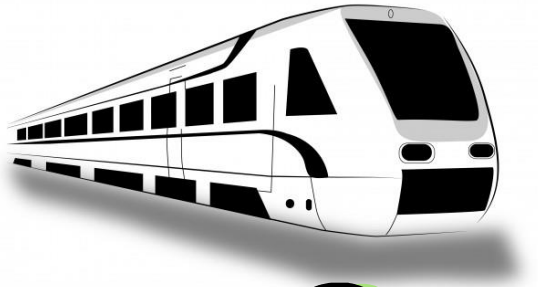
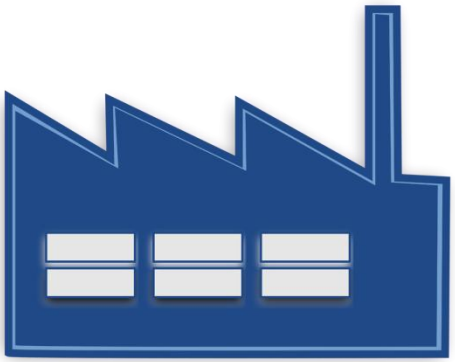
Five measures – shown in a "Bridge Scenario" – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth

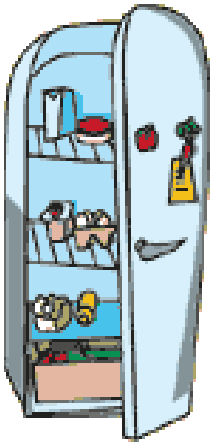
Average annual low-carbon investment, 2014-2040





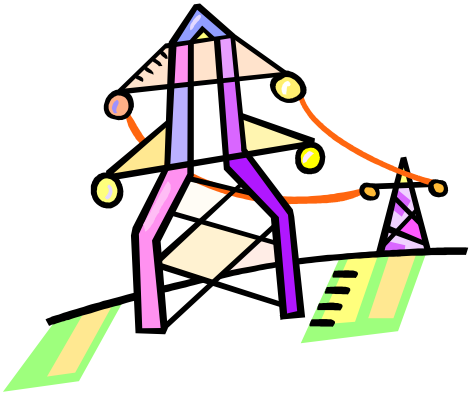


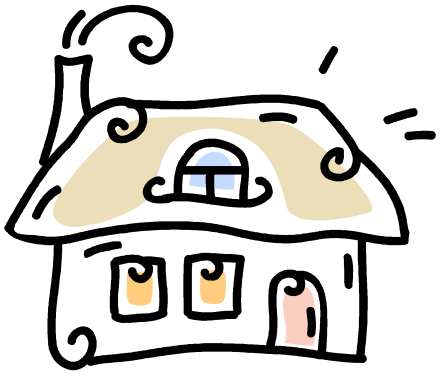



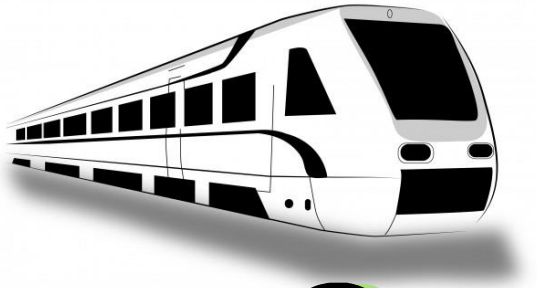



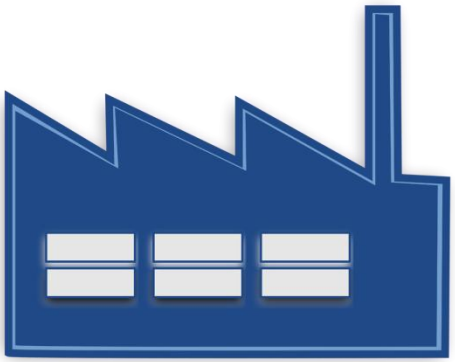

L’efficacité énergétique génère des bénéfices multiples qui vont bien au delà des simples réductions des factures

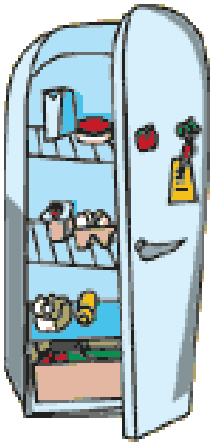
Energy Efficiency generates multiple benefits that brings much more that just the reduction of the energy bills











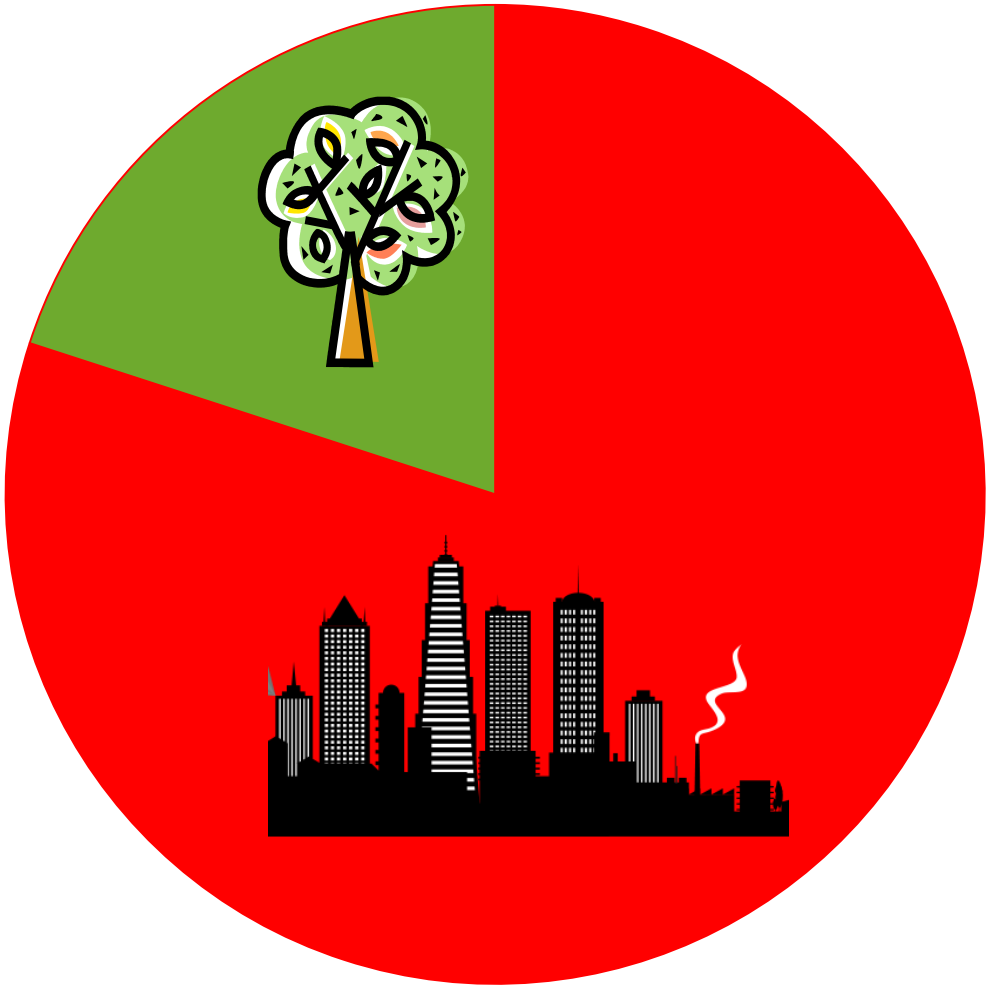
Global Urban Population
Population Urbaine Mondiale

2014 54%

2050 66%

Les villes comptent pour

80% de la consommation totale d'énergie



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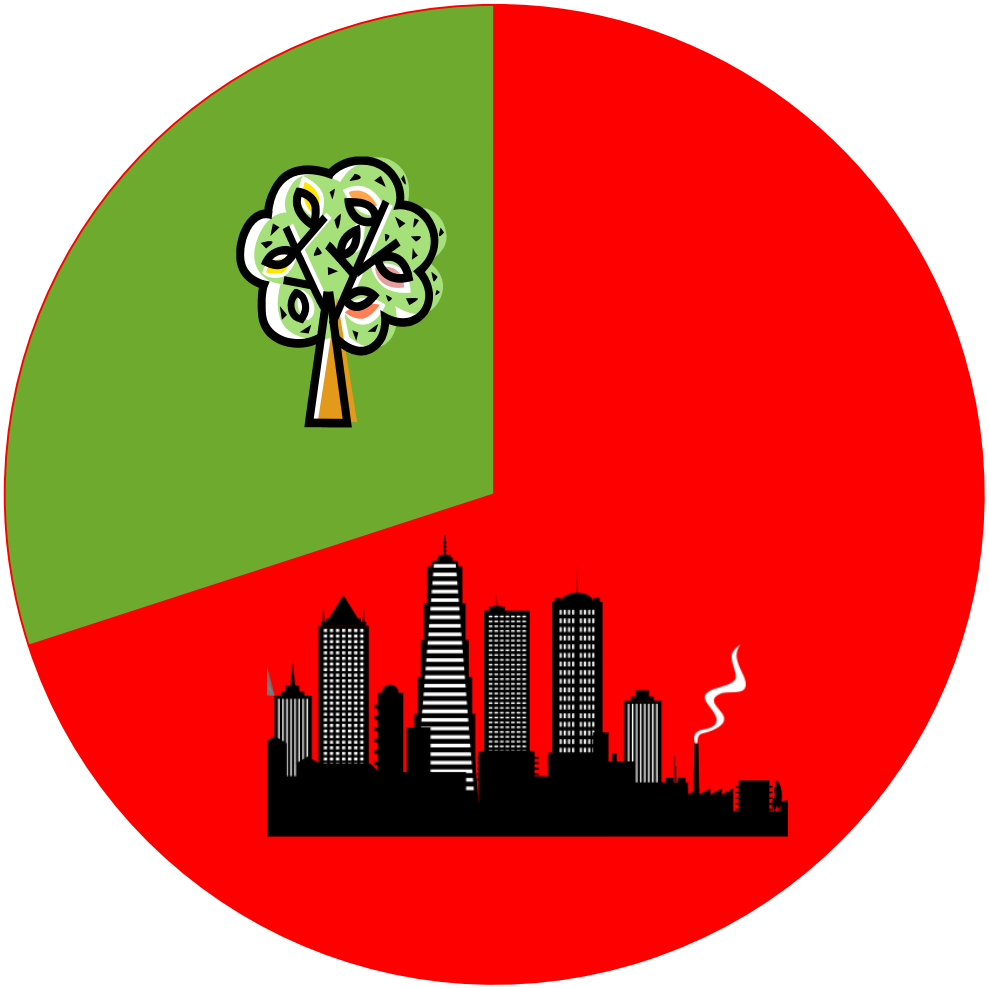
Les villes comptent pour

70% Emissions de Gaz à Effet de Serre



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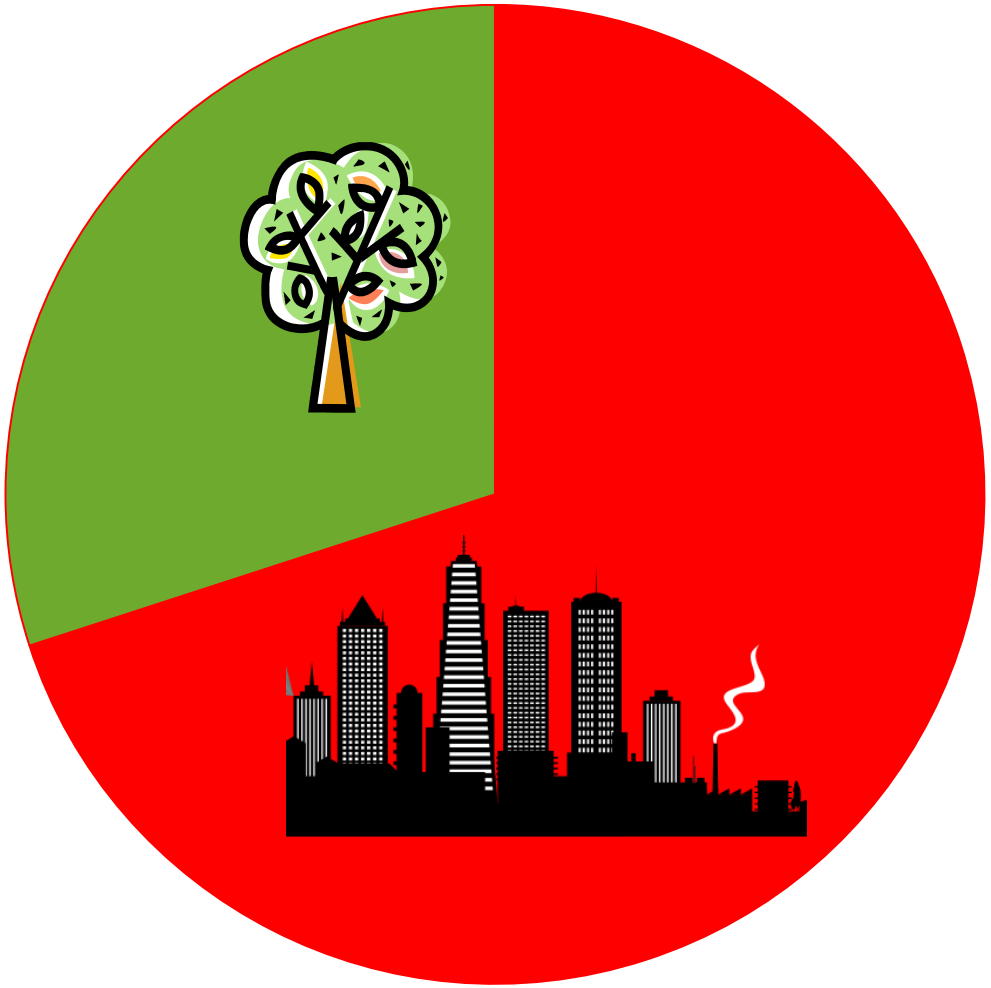
Les villes comptent pour

70% Consommation des Ressources



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Energie & Ville :
4 Responsabilités majeures

Une ville :

1. achète & consomme de l'énergie
2. distribue de l'énergie
3. planifie & investit infrastructures
4. communique & motive

Cities & Energy:
4 major responsibilities

Cities:

1. **Purchase & consume energy**
2. **Produce & distribute energy**
3. **Plan & invest in infrastructure**
4. **Communicate & Motivate**

L’importance du local pour l’Efficacité Energétique

Localement indispensable accès:

1. A l’information
2. Aux technologies
3. Au savoir faire
4. Au financement

The local dimension of Energy Efficiency

Indispensable local access to:

1. Information
2. Technologies
3. Know how
4. Finance

1. Cities purchase & consume energy

- Buildings, lighting, facilities, vehicles fleet
- Existing buildings -30% to -50%,
- new -80%
- From auditing to monitoring and financing
- Benchmarking, displaying
- Public procurement

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2. Cities produce & distribute energy

- Planning / co-ordination / optimisation of networks (heating and cooling, gas, electricity, water, sewage, ICT, etc.)
- Cogeneration (various scale), heat recovery
- Local renewable resources
- Smart grids and demand side management
- Connection with dispersed production

Local energy + less energy consumed =

Local development

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3. La ville planifie et investit

- Planification urbaine
- Recherche d'équilibre spatial des activités
- Choix des infrastructures
- Construction, réhabilitation
- Mobilité des personnes et des biens
- Supervision et gestion de l'énergie

Planification intelligente

Pour des réseaux intelligents

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3. Cities Plan & invest in infrastructure

- Land use planning
- Mixity of activities
- Infrastructures
- Construction, retrofitting
- Mobility and transport
- Overview on energy and emissions

Smart planning before Smart Cities

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4. La ville communique et motive

- Information, éducation, sensibilisation
- Promotion et support aux expérimentations
- Campagnes locales, Incitations $
- Stimulation des acteurs locaux (associations, PMEs, citoyens,… etc.)

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4. Cities Communicate & Motivate

- Information, awareness raising, education
- Promotion of energy efficient pioneers
- Incentives, local campaigns
- New governance with leading players (citizens, associations, SMEs, etc.)

Cities are keys to move all economies on a low carbon & clean energy path.

Energy Efficiency can become the first fuel…

…if it is fuelled first.

Energy Efficiency needs support & governance at both national & local level.

International collaboration can facilitate, enhance & accelerate national EE policies

GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET
www.theGEF.org

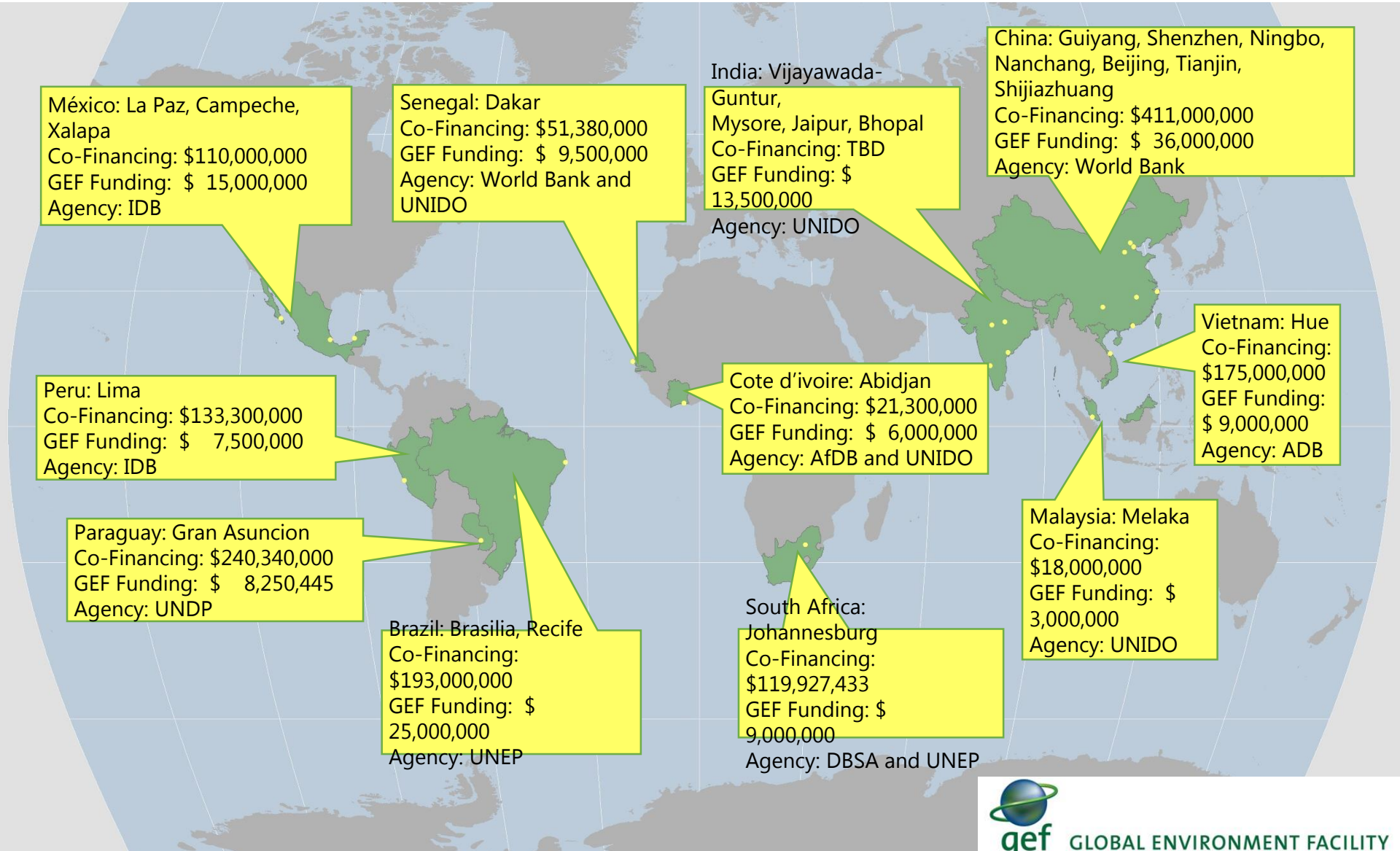
Sustainable Cities Integrated Approach Pilot

Global Distribution of GEF Urban Projects

✓GEF support for sustainable urban development started in 1999
✓110 projects in 123 cities and 67 countries
✓$773 M committed, with $9.3 billion leveraged in co-financing

Sustainable Cities Integrated Approach Pilot

Total GEF Financing: $151.6 million; Total Indicative Co-financing: $ 1,478.6 million

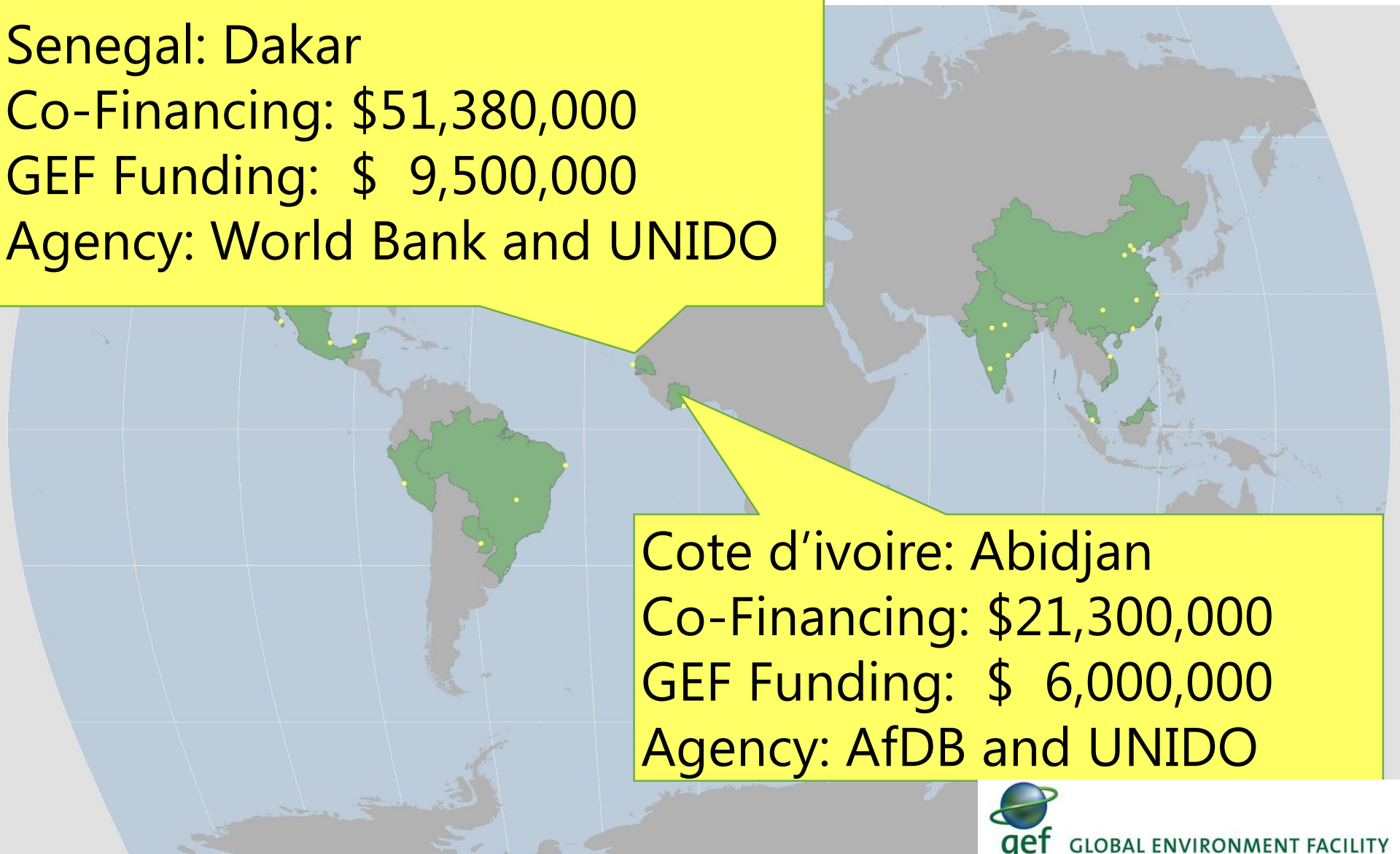


GLOBAL ENVIRONMENT FACILITY

Sustainable Cities Integrated Approach Pilot

Total GEF Financing: $151.6 million; Total Indicative Co-financing: $ 1,478.6 million

Senegal: Dakar
Co-Financing: $51,380,000
GEF Funding: $ 9,500,000
Agency: World Bank and UNIDO



Cote d'ivoire: Abidjan
Co-Financing: $21,300,000
GEF Funding: $ 6,000,000
Agency: AfDB and UNIDO

GLOBAL ENVIRONMENT FACILITY

UNEP Global Initiative for Resource Efficient Cities

The ISO 37120 Open Data Portal

ISO 37120 was published in May 2014 by the International Organization for Standardisation (ISO).

- Enable local and international benchmarking
- Establish baseline data to monitor and review progress on investments year by year
- Foster comparative learning and sharing of solutions

Building a family of standards:
sustainable cities + smart cities + resilient cities

Les Indicateurs de ISO 37120

- Economy
- Education
- Energy
- Environment
- Finance
- Fire & Emergency Response
- Governance
- Health
- Recreation
- Safety
- Shelter
- Solid Waste
- Telecommunications
- Transportation
- Urban Planning
- Wastewater
- Water & Sanitation

ISO 37120 includes 100 indicators (46 core and 54 supporting), which are structured around 17 themes.

Les premières villes certifiées ISO 37120

International Initiatives

- **ESMAP EE & Cities programmes**
  - **Mexique Juin 2014, Vienne Juin 2015**
  - **Pueblas Février 2016**
- **Japan SE4All Hub: SE4All Global Energy Efficiency Forum on Cities** http://se4allateccj.org/se4all-global-energy-efficiency-forum-cities/
- **GEF Sustainable Cities**
- **Conference Smart Cities, Barcelone, Octobre 2015**
- **UN Habitat 2016**
- **Urban Climate Initiative http://architecture2030.org/**

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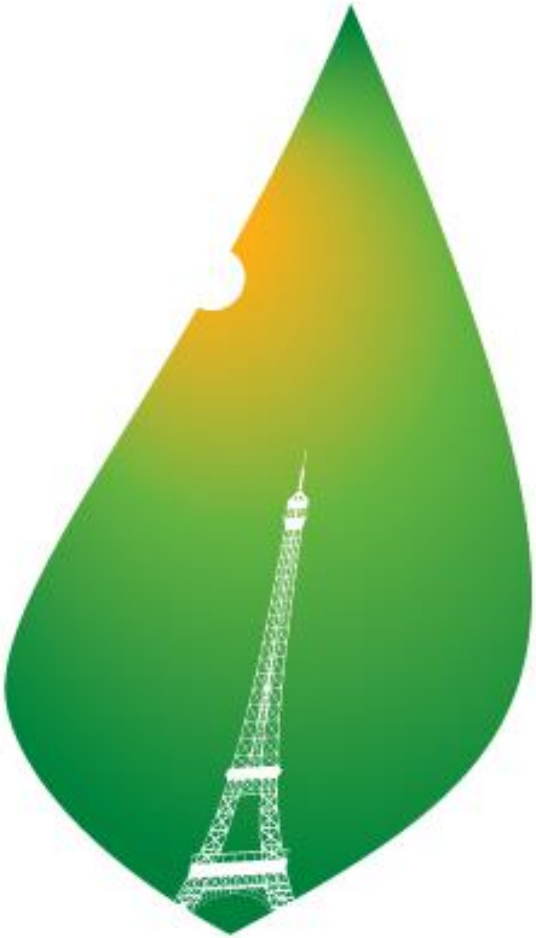

PARIS2015

UN CLIMATE CHANGE CONFERENCE

COP21·CMP11

Nous changeons d'Ère

Nous sommes entrés dans l'Antropocene

Nous changeons d'Air

L'air que nous respirons devient marchandise

Nous changeons d'Aire

Indispensable solidarité entre local & global

International Partnership for **Energy Efficiency** Cooperation

Merci !

www.ipeec.org

benoit.lebot@ipeec.org

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Energy Efficiency Services Limited

(A Joint Venture of PSUs of Ministry of Power, GoI, at Delhi)

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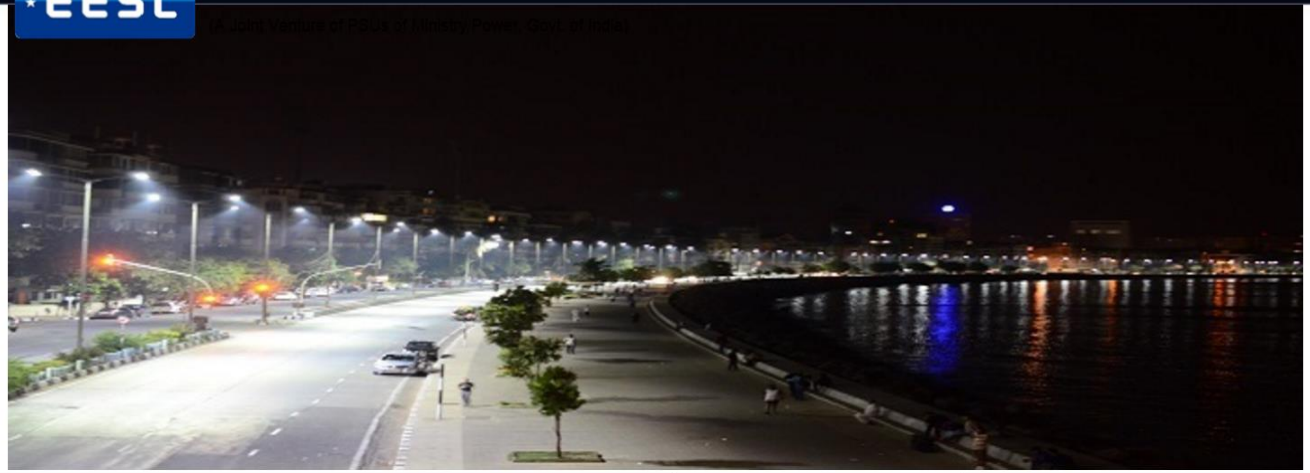

Street Lighting- Marine Drive, Mumbai

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About Us

The overall size of energy efficiency market is estimated to be Rs. 74,000 crores. Till now, only 5% of this market has been tapped through ESCO mode mainly in the areas of lighting and some industrial applications and the large-scale implementation of energy efficiency is constrained by a number of important regulatory, institutional and financing barriers..... Read More

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