- **Bolivia,** Mr. Roberto Ayala, Project Manager, PHOCOS

Sustainable Development Goal 7.
Sustainables and Efficiency solutions for all

Australia | Bangladesh | Bolivia | Brazil | China | Germany | India | Japan | Kenya | Romania | Singapore | South Africa | USA

FAMILIES AND THE CANDLE

- FIRE RISKS
- DAMAGE TO HEALTH
- LOW EDUCATION LEVELS
- NO FAMILIAR INTEGRATIÓN (DAYS ENDS AT SUNSET)
- HIGH EXPENSES IN CANDELS, DIESEL AND BATERIES
- LIMITATION IN CELULAR AND RADIO COMUNICATION

- **LATIN AMERICA, 30 MILLIONS PEOPLE WITHOUT ACCESS TO ELECTRICITY.**

- **IS IT POSIBLE TO REACH THE UNIVERSAL ACCESS TO ENERGY BY 2030?**

HOW…?

SOME NECCESARY CONDITIONS

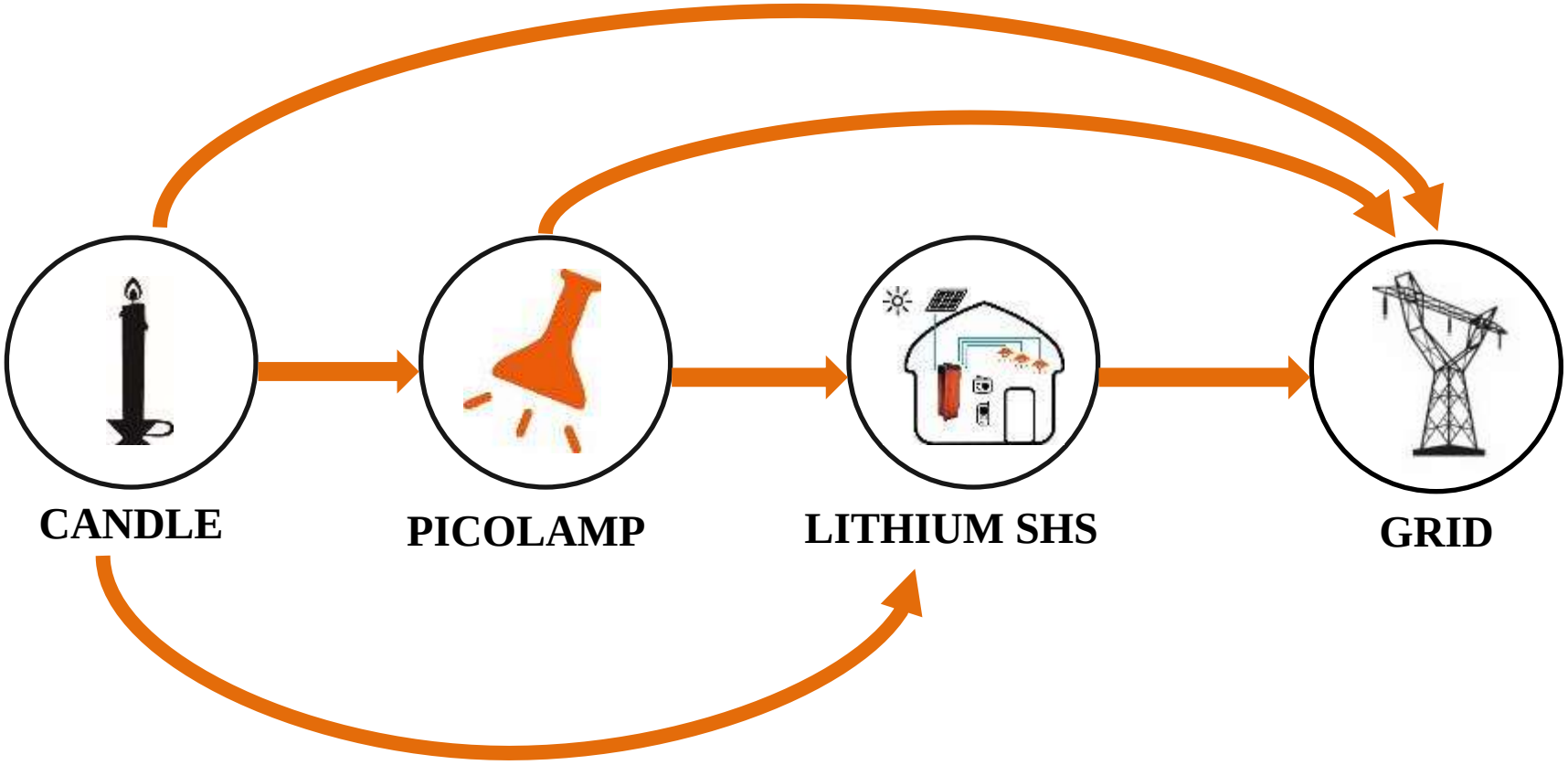
1. POLITICAL DECISION
2. AVAILIBITY OF THE TECHNOLOGYE
3. TO KNOW WHERE TO GET THE FINANTIAL ISSUES
4. TO FIND THE MODEL FOR IMPLEMENTATION

IN BOLIVIA, 500.000 families without Electricity
AGENDA 2025: Universal Access for Basic Services

Points 1,2,3 OK
Point 4: ????

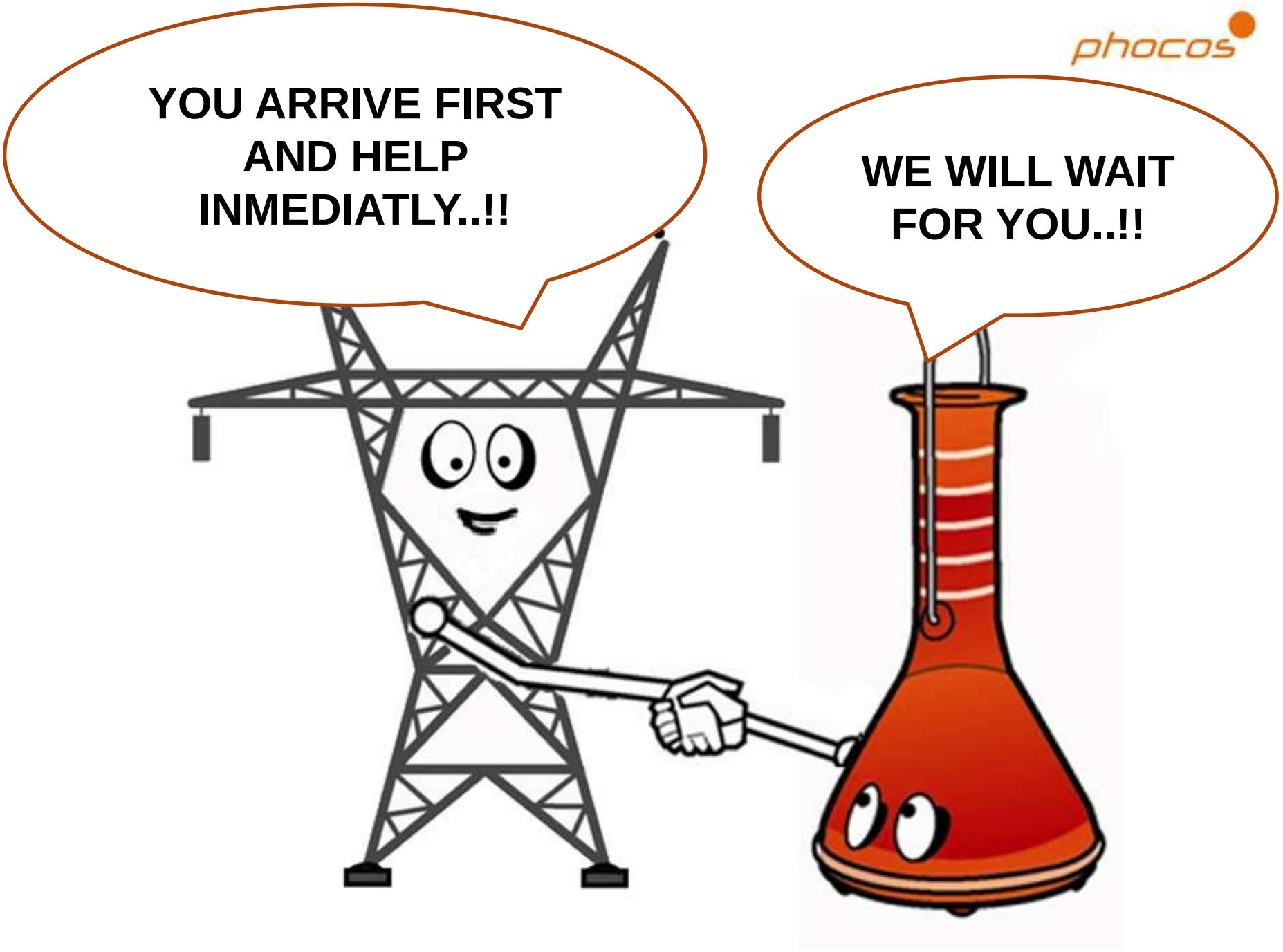
UNIVERSAL ACCESS TO ENERGY….
WHAT IS IT POSIBLE…?

LUCES NUEVAS
FUNDACIÓN

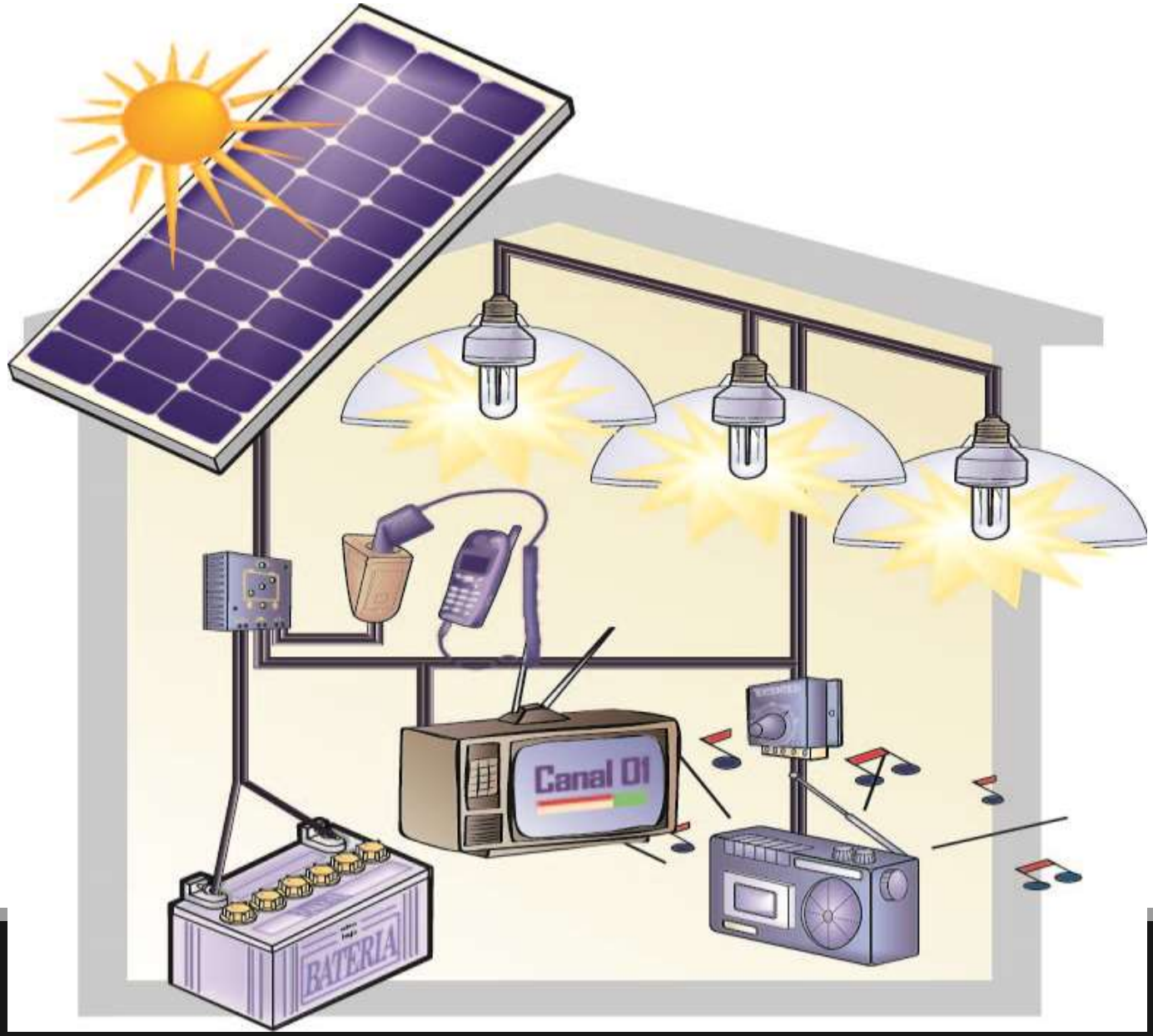


PICOLAMP….FIRST STEP OF THE SOLUTION

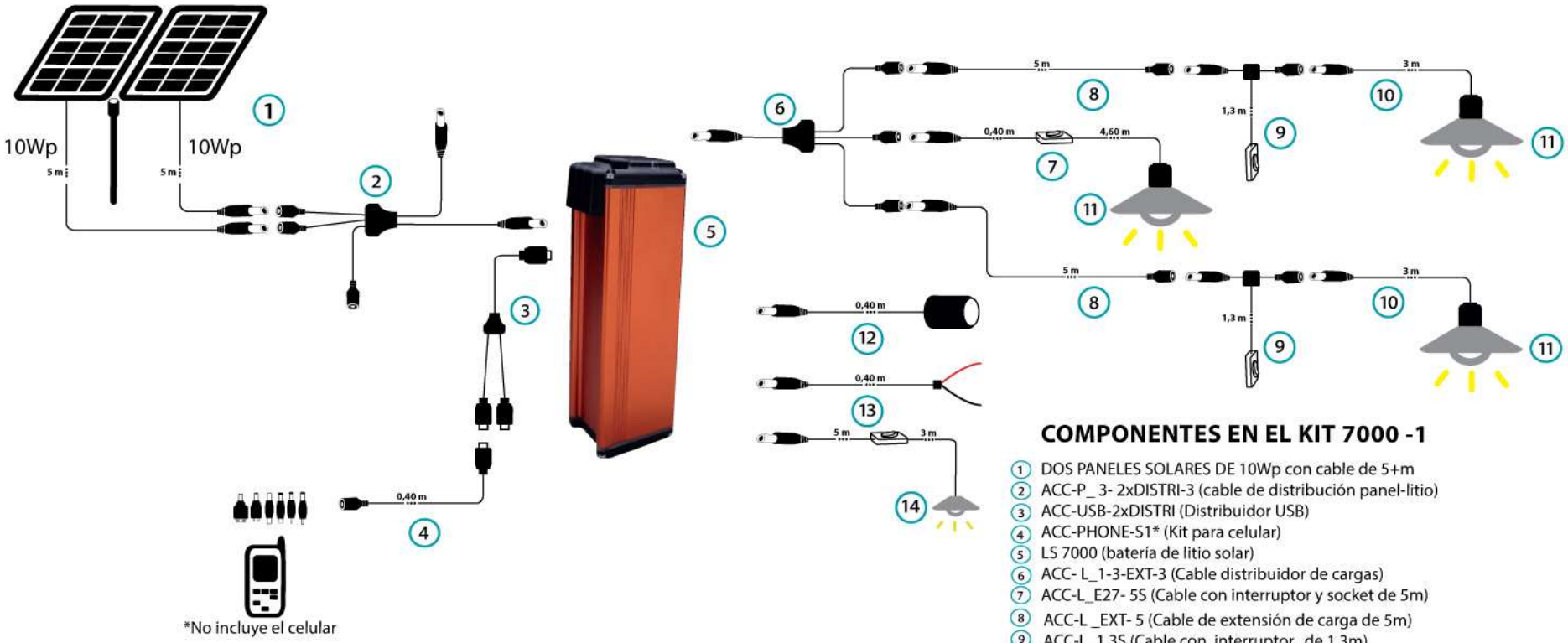
phocos



TRADITIONAL SHS (1990-2013)



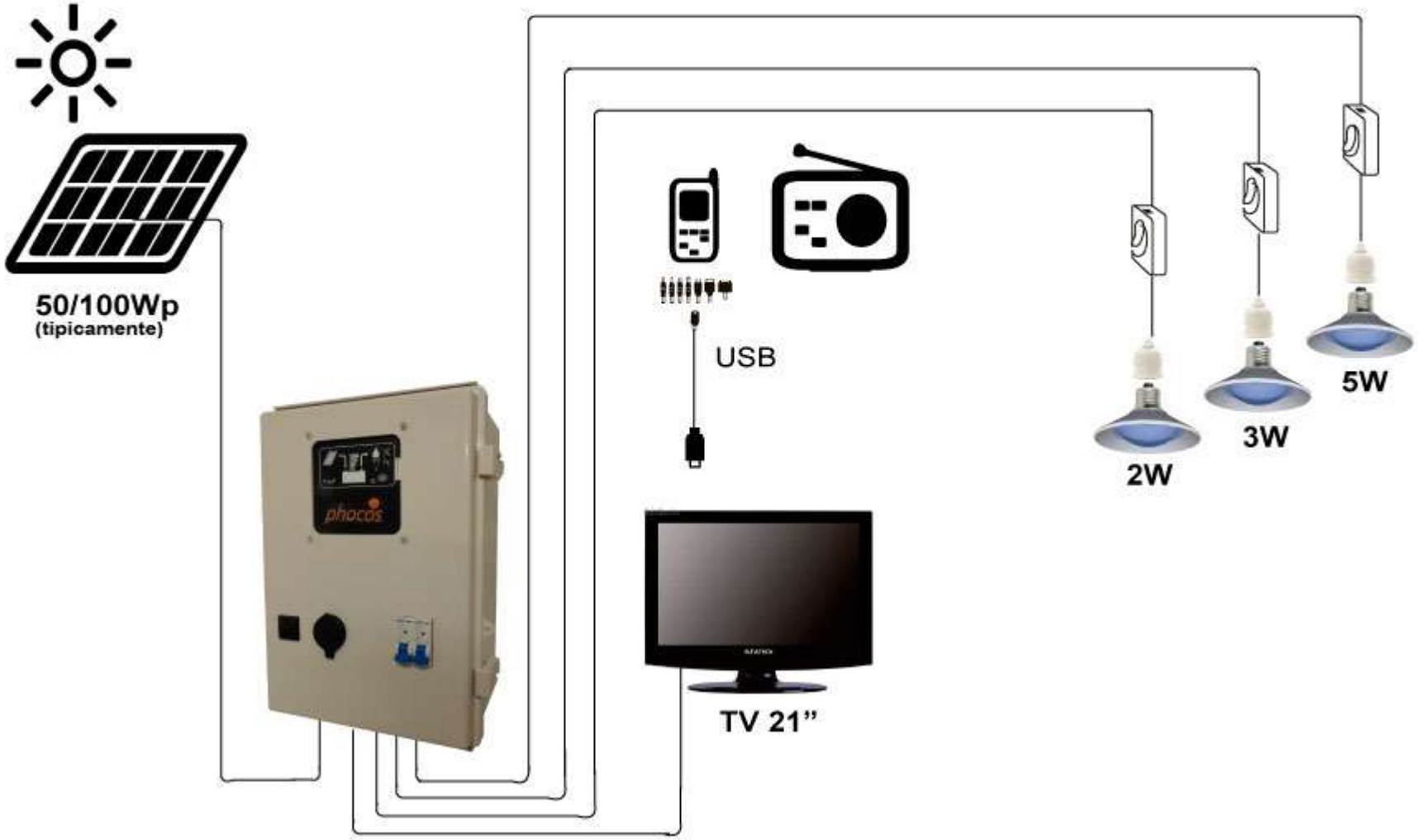
NEW TENDENCY….LITHIUM-LED SYSTEMS



COMPONENTES EN EL KIT 7000 -1

1. DOS PANELES SOLARES DE 10Wp con cable de 5+m
2. ACC-P_ 3- 2xDISTRI-3 (cable de distribución panel-litio)
3. ACC-USB-2xDISTRI (Distribuidor USB)
4. ACC-PHONE-S1* (Kit para celular)
5. LS 7000 (batería de litio solar)
6. ACC- L_1-3-EXT-3 (Cable distribuidor de cargas)
7. ACC-L_E27- 5S (Cable con interruptor y socket de 5m)
8. ACC-L _EXT- 5 (Cable de extensión de carga de 5m)
9. ACC-L_1.3S (Cable con interruptor, de 1,3m)
10. ACC-L_E27-3 (Cable con socket de 3m)
11. LÁMPARAS LED (3W,3W,2W)
12. ACC-L_CAR-1(Cable tipo cigarrera para cargas de 12v de 0,40 m)
13. ACC-L_ 0.4 (Cable para otras cargas de 0,40m)
14. LED MINI SUNFLOWER 0.25W (12v y cable de 8m)

MORE POWER with Lithium…UP TO 500 Wh

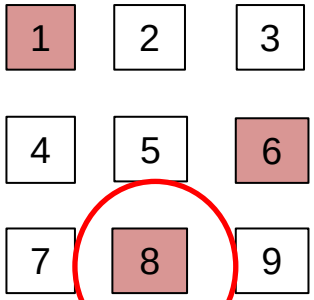



LAPHIA

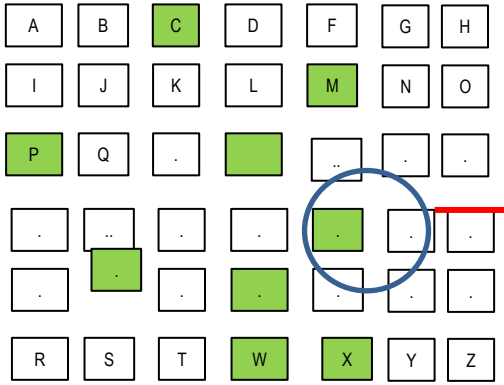
CLASICAL MODEL OF "PLANIFICATION" IN ENERGY

"BY DEMMAND"

Bolivia, 9 departaments

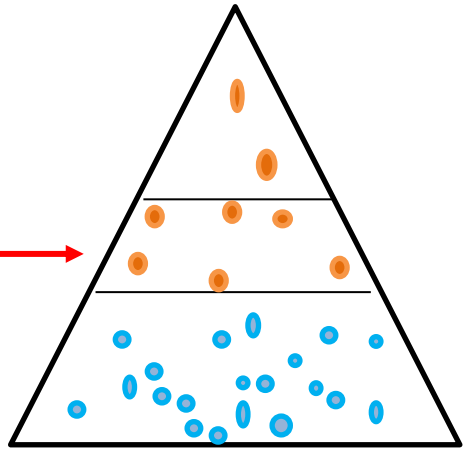


Municipios



SOLUTIONS Not for all the Municipes

Families



SOLUTIONS Not for all the families

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WE REQUIRE NEW MODELS …

- THINKING IN BIG (BOLIVIA)

- THINKING IN BIG (BOLIVIA)
- START SMALL (TIQUIPAYA)

- THINKING IN BIG (BOLIVIA)
- START SMALL (TIQUIPAYA)
- WALK FAST

THE PROBLEM

3650 NIGHTS WITHOUT LIGHT

TO HAVE A PLAN HELPS:

- ***To Prevent overlappings***
- ***To Analize options***
- ***To Organize the growing***
- ***To Decide investment***
- ***To Optimize services***

PLANNING IN RURAL ELECTRIFICATION

1. Let us to know the cost of implementation of the Universal Access to Energy

2. Allow to define the technical solution in function of the time, without overlappings

1. Is posible to reach a goal in an specific period of time.

CRITERIA TO SELECT THE TECHNOLOGIE FOR THE UNIVERSAL ACCESS (DENSIFICATION, GRID EXTENSION, SOLAR ENERGY, OTHERS)

1. DISTANCE TO THE ACTUAL EXISTING GRID

2. COST OF THE INVESTMENT PER FAMILY (DIFFERENT TECHNICAL OPTIONS)

3. GEOPOLITICAL CONSIDERATIONS

Strategic Plan of Rural Electrification

OBJETIVE:

TO PROPOSE INSTRUMENTS FOR REACHING THE UNIVERSAL ACCESS TO ENERGY BY 2025 IN BOLIVIA.

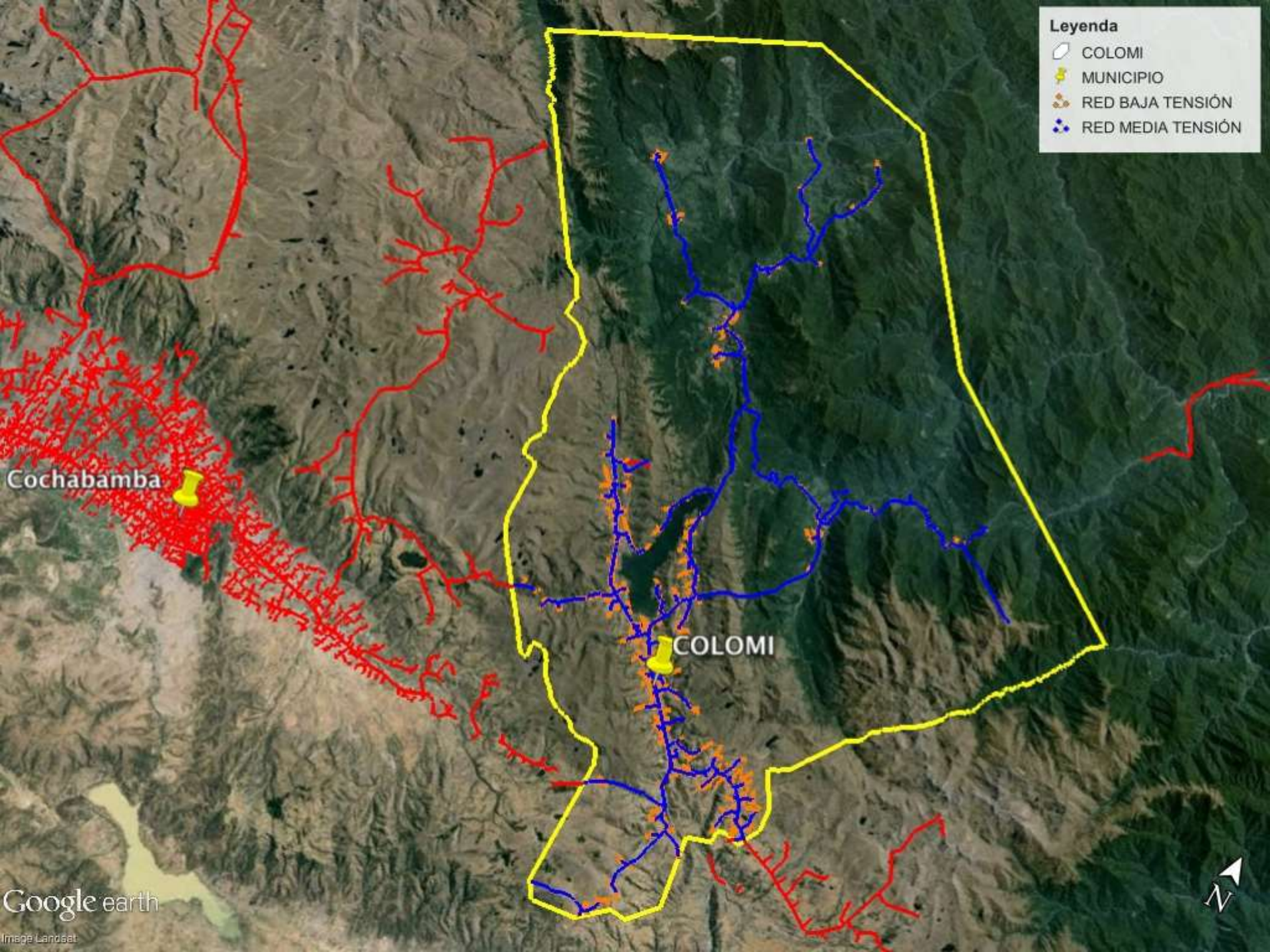
DESIGNING THE PLAN

COORDINATION WITH:

- **LOCAL POLITICAL AUTORITHIES**
- **COMMUNITARY AUTORITHIES**
- **FAMILIES**
- **TEACHERS**
- **OTHER INSTITUTIONS**

METHODOLOGY

- ***SENSIBILIZATION OF ALL THE ACTORS***
- ***GEO REFERENTIAL OF FAMILIES***
- ***ANALYSIS. TECHNICAL OPTIONS AND FINANCIAL STRUCTURE,***
- ***MAYOR, COMUNITIES AND FAMILIES MUST DECIDE HOW AND WHEN WILL BE THE PLAN***


Leyenda
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RED BAJA TENSIÓN
RED MEDIA TENSIÓN
Cochabamba
COLOMI
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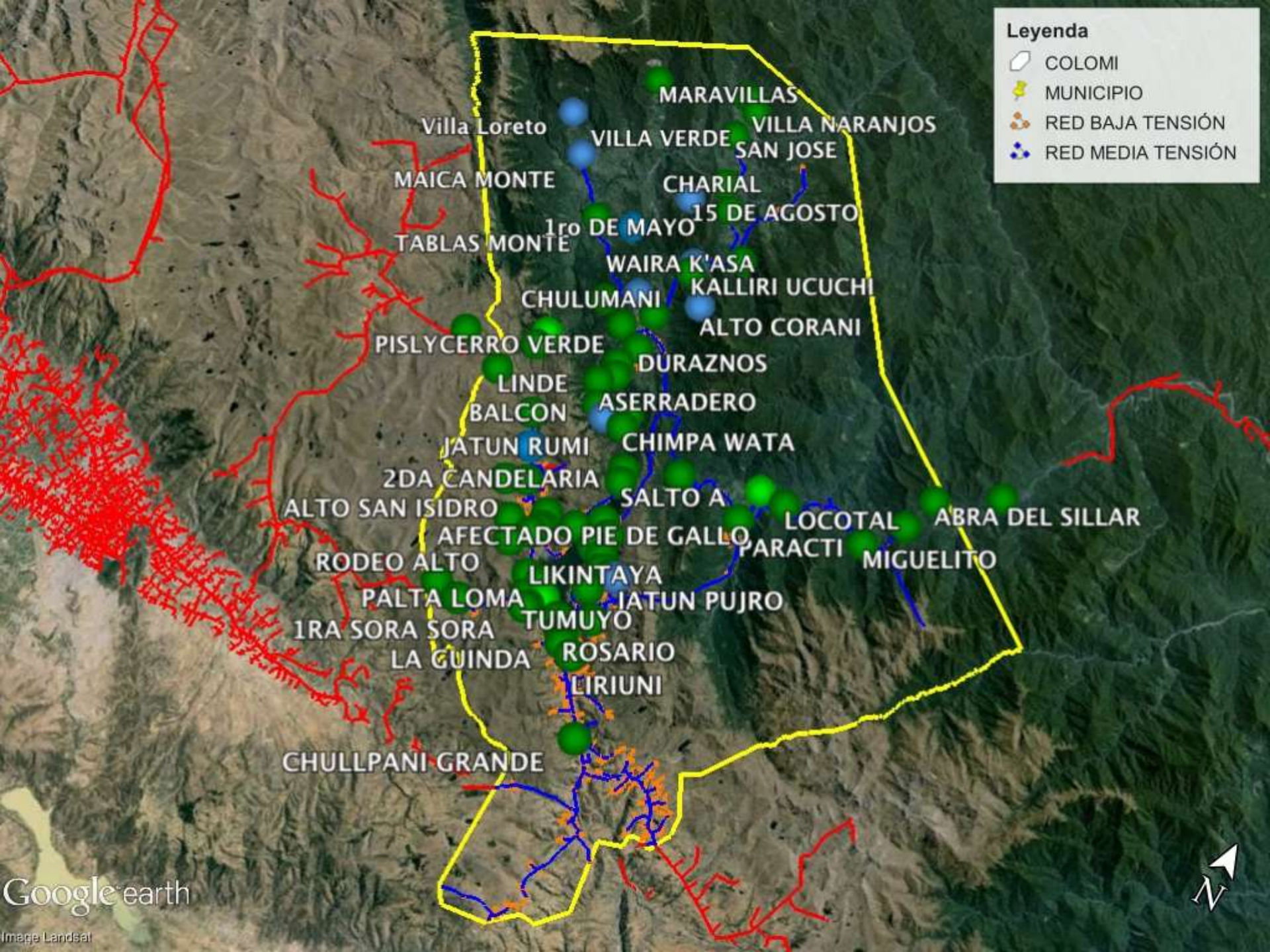
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Villa Loreto
VILLA VERDE
VILLA NARANJOS
SAN JOSE
MAICA MONTE
CHARIAL
15 DE AGOSTO
1ro DE MAYO
TABLAS MONTE
WAIRA K'ASA
KALLIRI UCUCHI
CHULUMANI
ALTO CORANI
PISLYCERRO VERDE
DURAZNOS
LINDE
ASERRADERO
BALCON
CHIMPA WATA
JATUN RUMI
2DA CANDELARIA
SALTO A
ALTO SAN ISIDRO
LOCOTAL
ABRA DEL SILLAR
AFECTADO PIE DE GALLO
PARACTI
MIGUELITO
RODEO ALTO
LIKINTAYA
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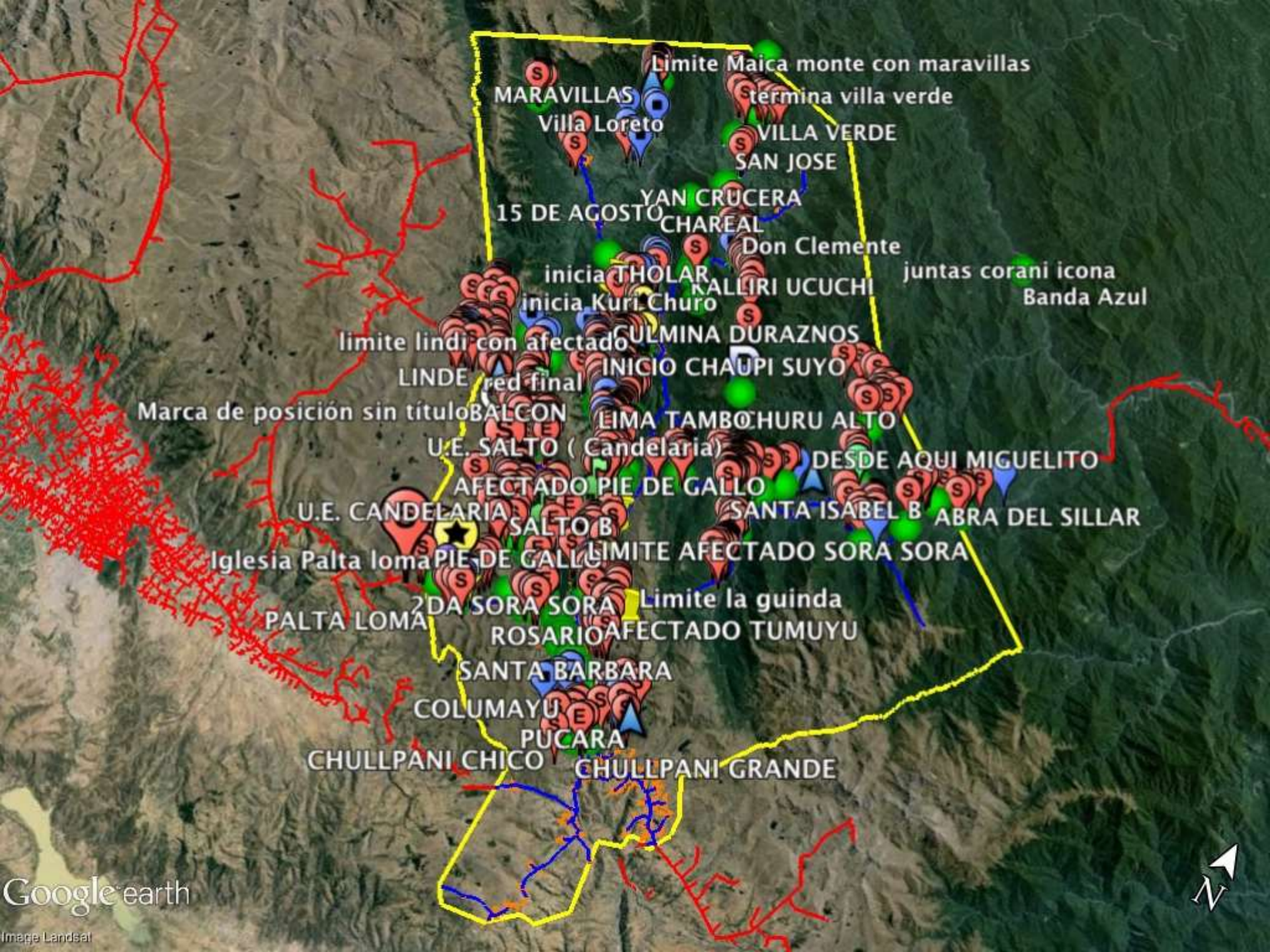
Limite Maica monte con maravillas
MARAVILLAS
termina villa verde
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YAN CRUCERA
15 DE AGOSTO
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Don Clemente
inicia THOLAR
juntas corani icona
KALLIRI UCUCHI
Banda Azul
inicia Kuri Churo
CULMINA DURAZNOS
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BALCON
LIMA TAMBO
CHURU ALTO
U.E. SALTO (Candelaria)
DESDE AQUI MIGUELITO
AFECTADO PIE DE GALLO
U.E. CANDELARIA
SANTA ISABEL B
ABRA DEL SILLAR
SALTO B
Iglesia Palta loma
PIE DE GALLO
LIMITE AFECTADO SORA SORA
2DA SORA SORA
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PALTA LOMA
ROSARIO
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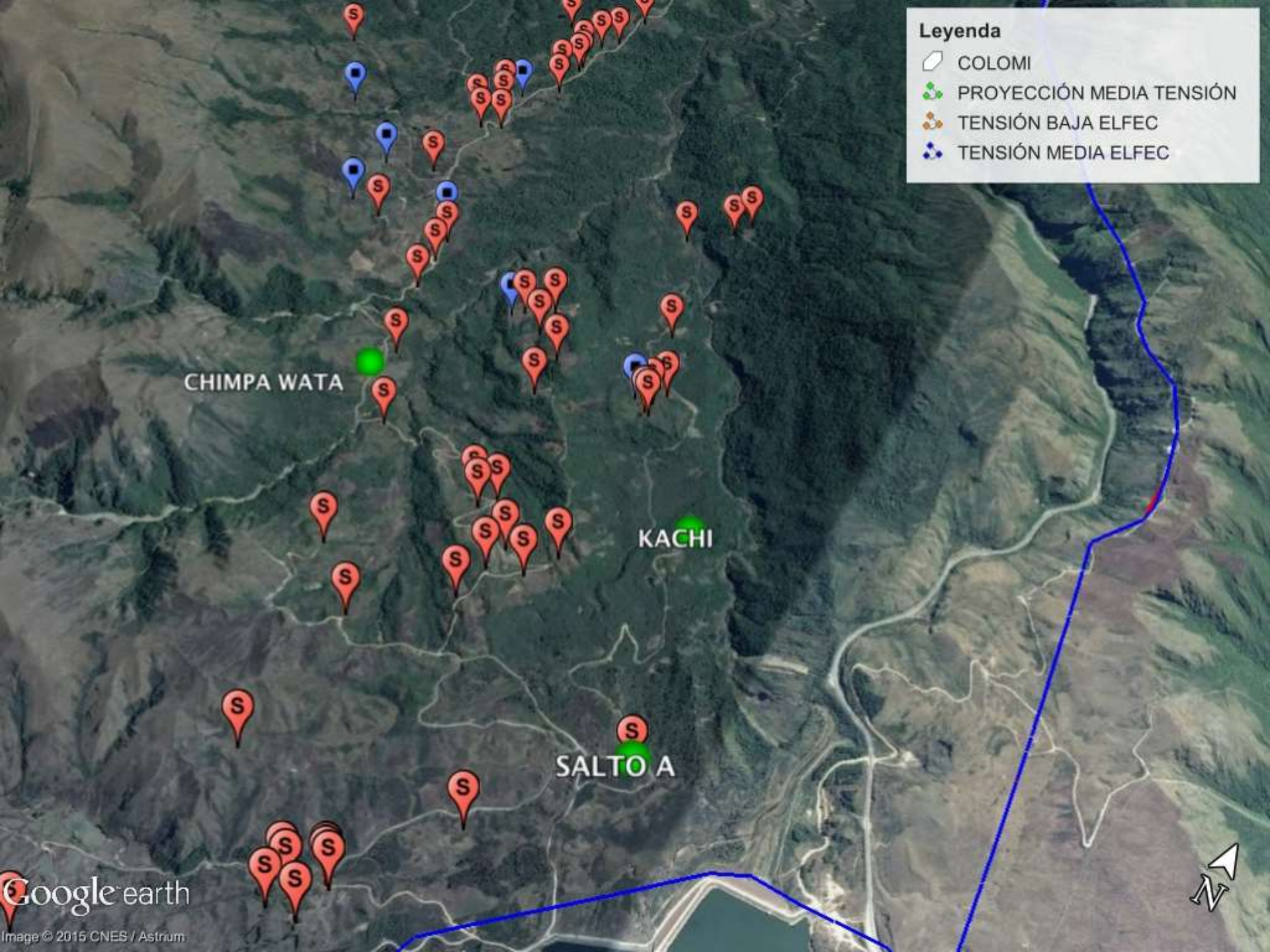
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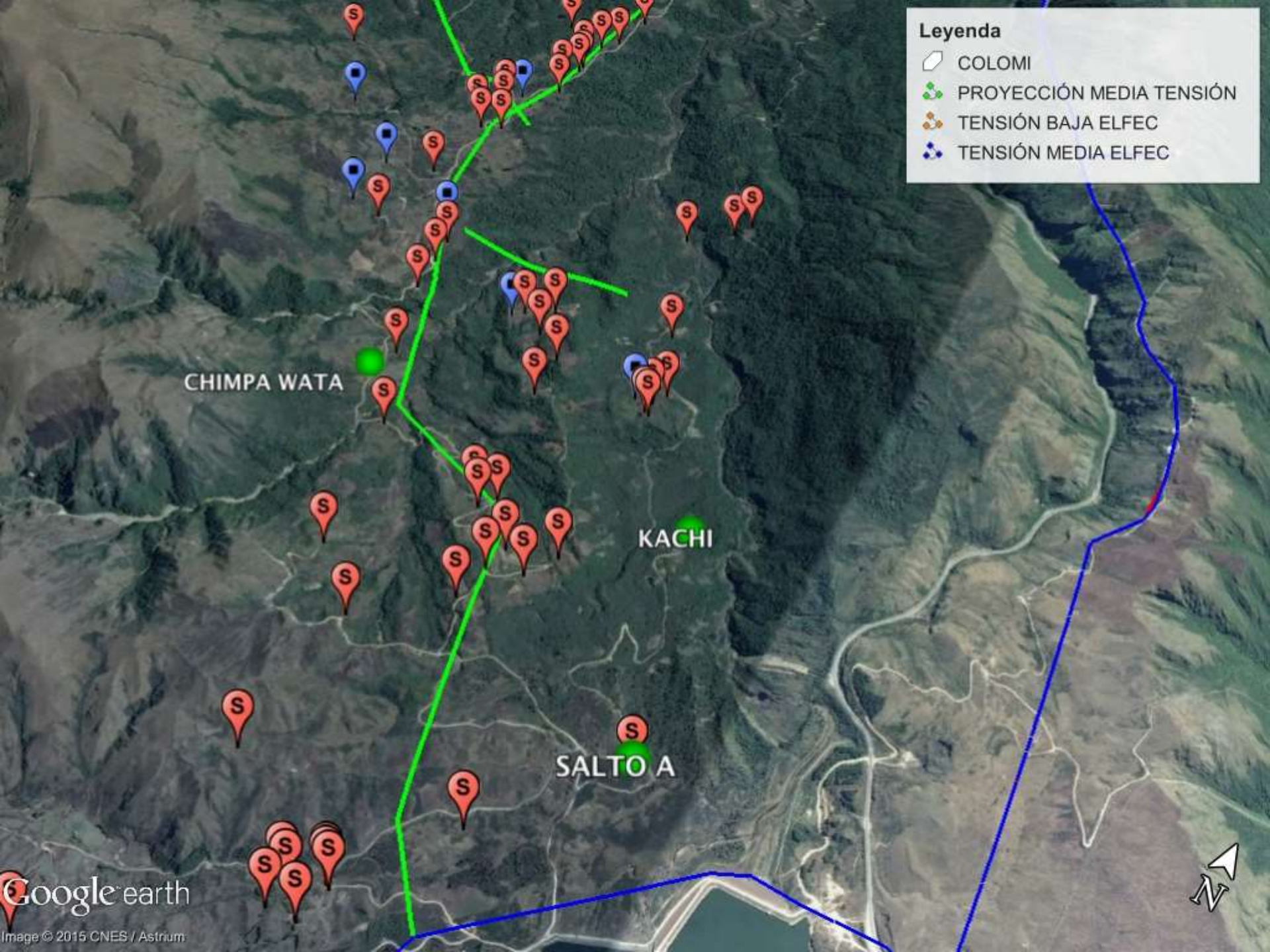
Google earth
Image © 2015 CNES / Astrium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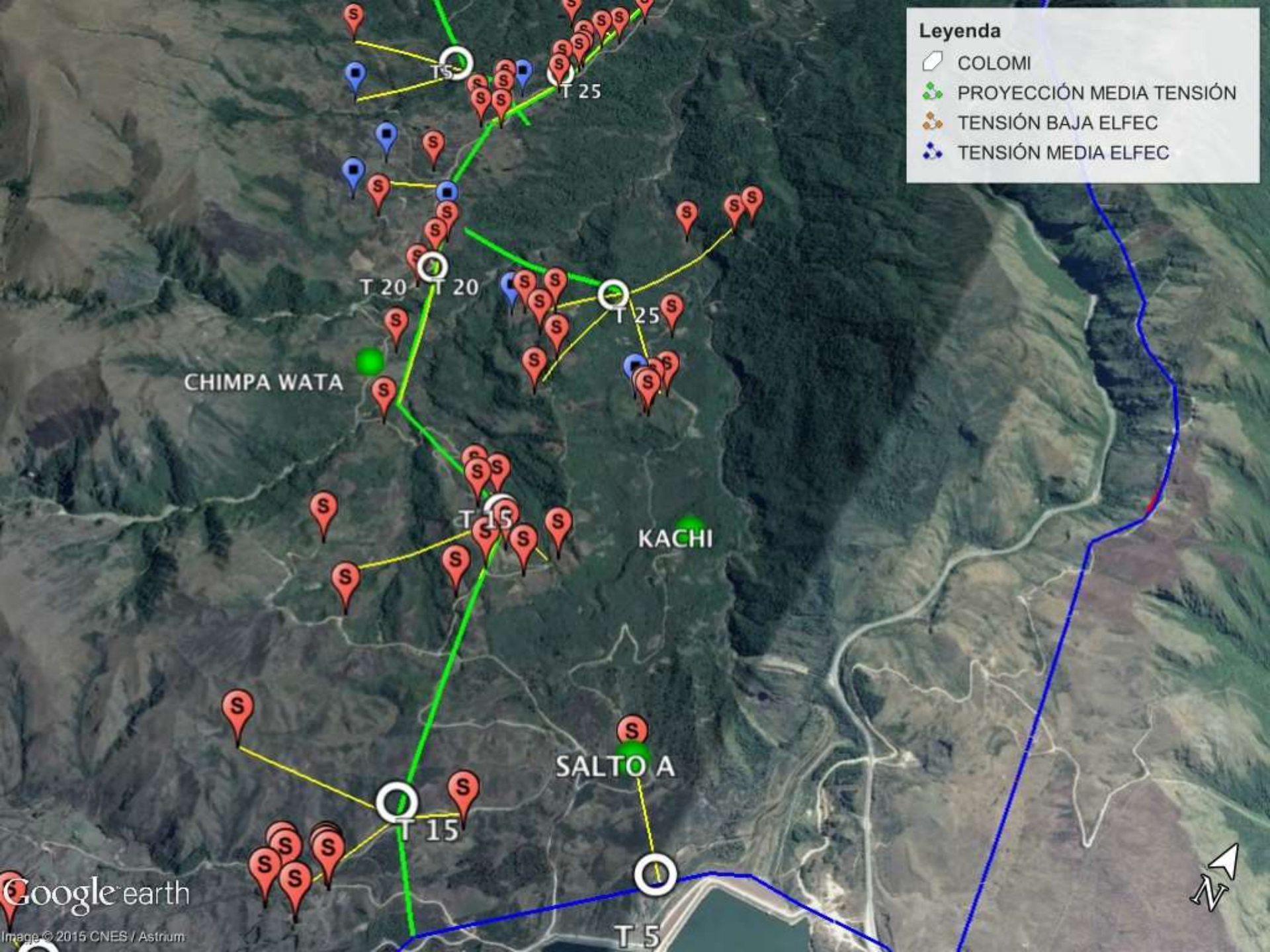
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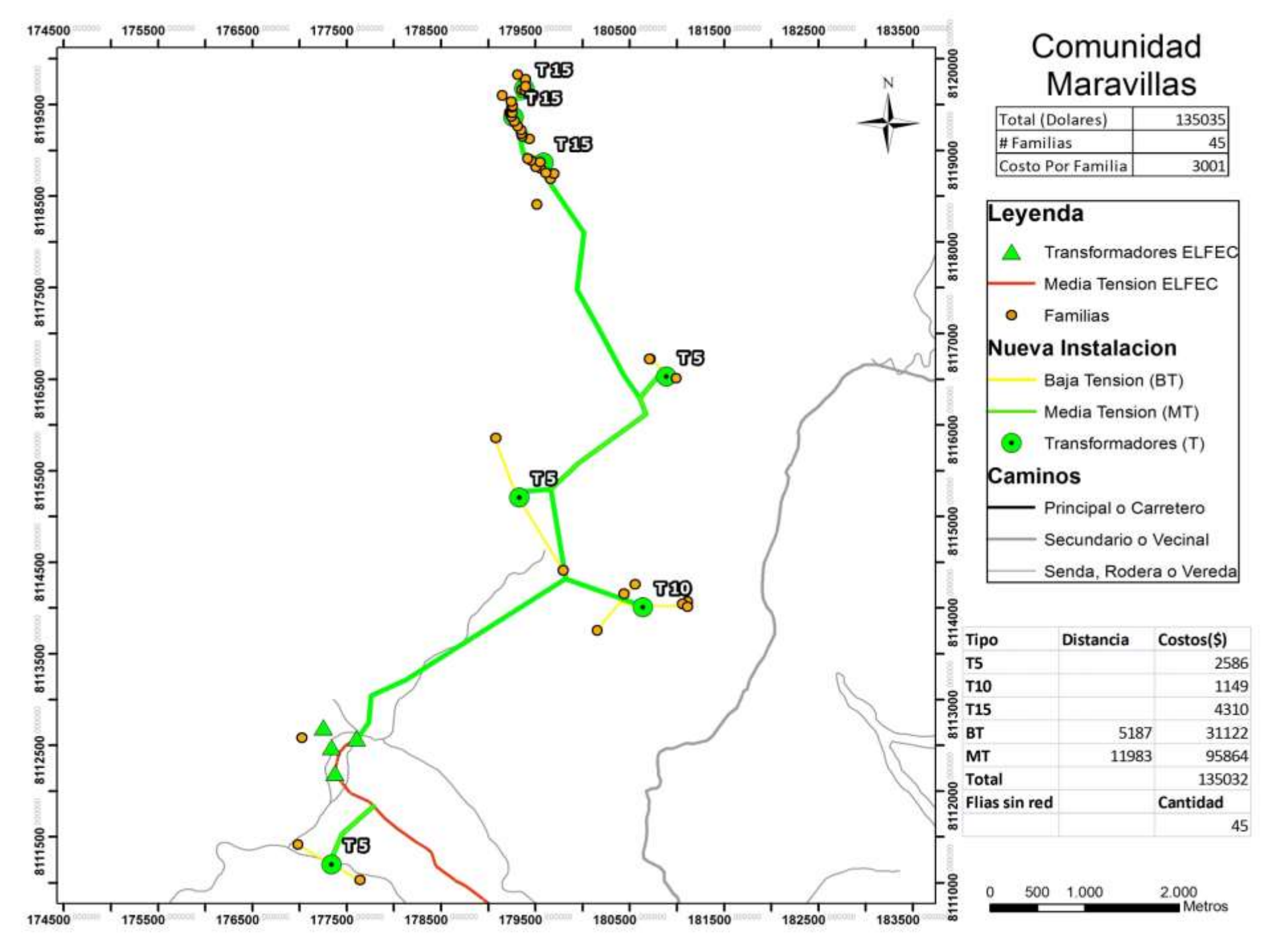
Comunidad Maravillas
Total (Dolares) 135035
Familias 45
Costo Por Familia 3001
Leyenda
Transformadores ELFEC
Media Tension ELFEC
Familias
Nueva Instalacion
Baja Tension (BT)
Media Tension (MT)
Transformadores (T)
Caminos
Principal o Carretero
Secundario o Vecinal
Senda, Rodera o Vereda
Tipo Distancia Costos($)
T5 2586
T10 1149
T15 4310
BT 5187 31122
MT 11983 95864
Total 135032
Flias sin red Cantidad
45
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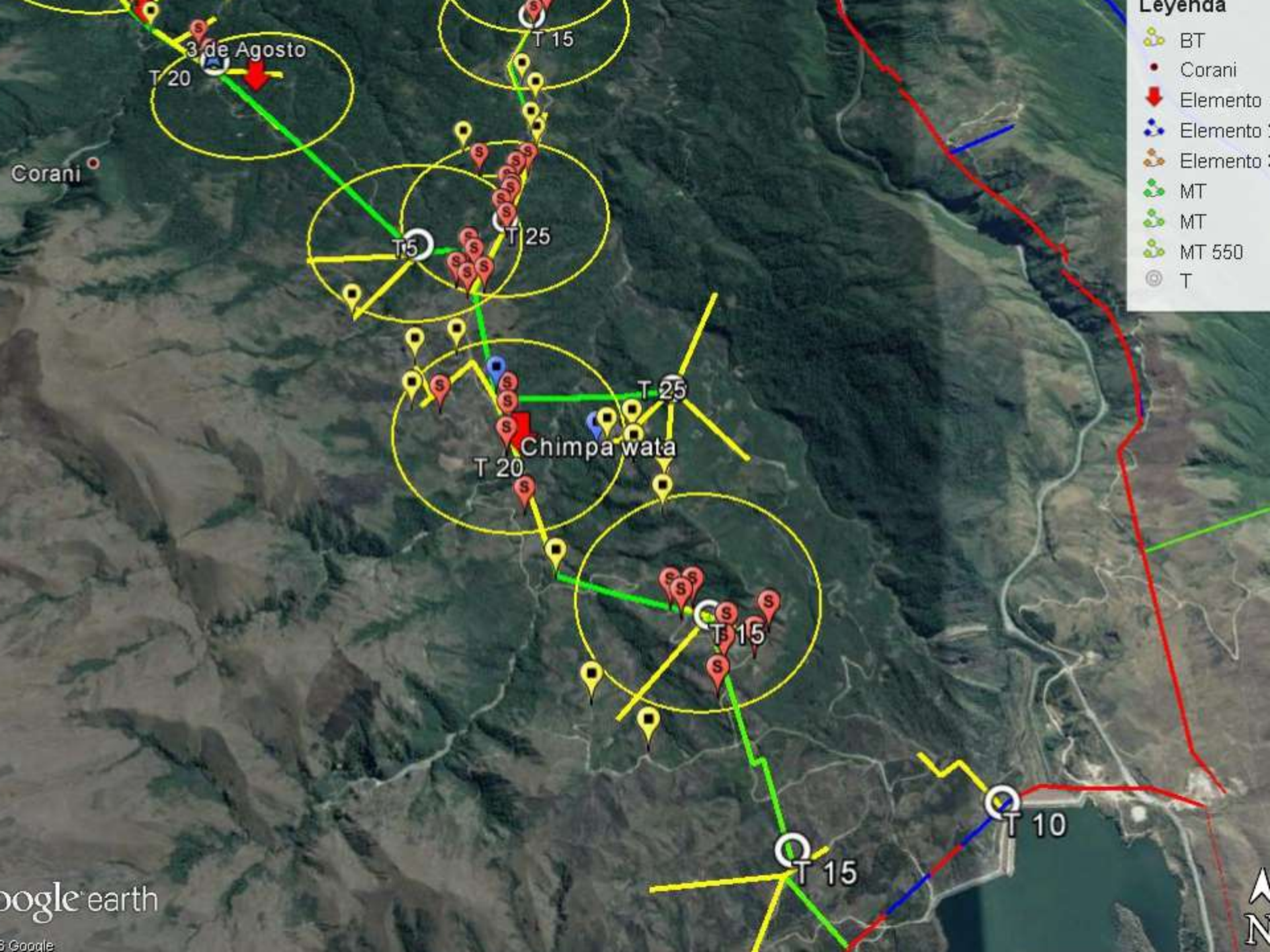
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UNIVERSAL ACCESS WITH GRID (REQUIRED MATERIALS)

	QTY
MEDIUM VOLTAJE WIRE	151.759 mts
LOW VOLTAGE WIRE	121.427 mts
TRANSFORMERS 14.4KV/230	150 units.
TOTAL	**2.791.200 $US**

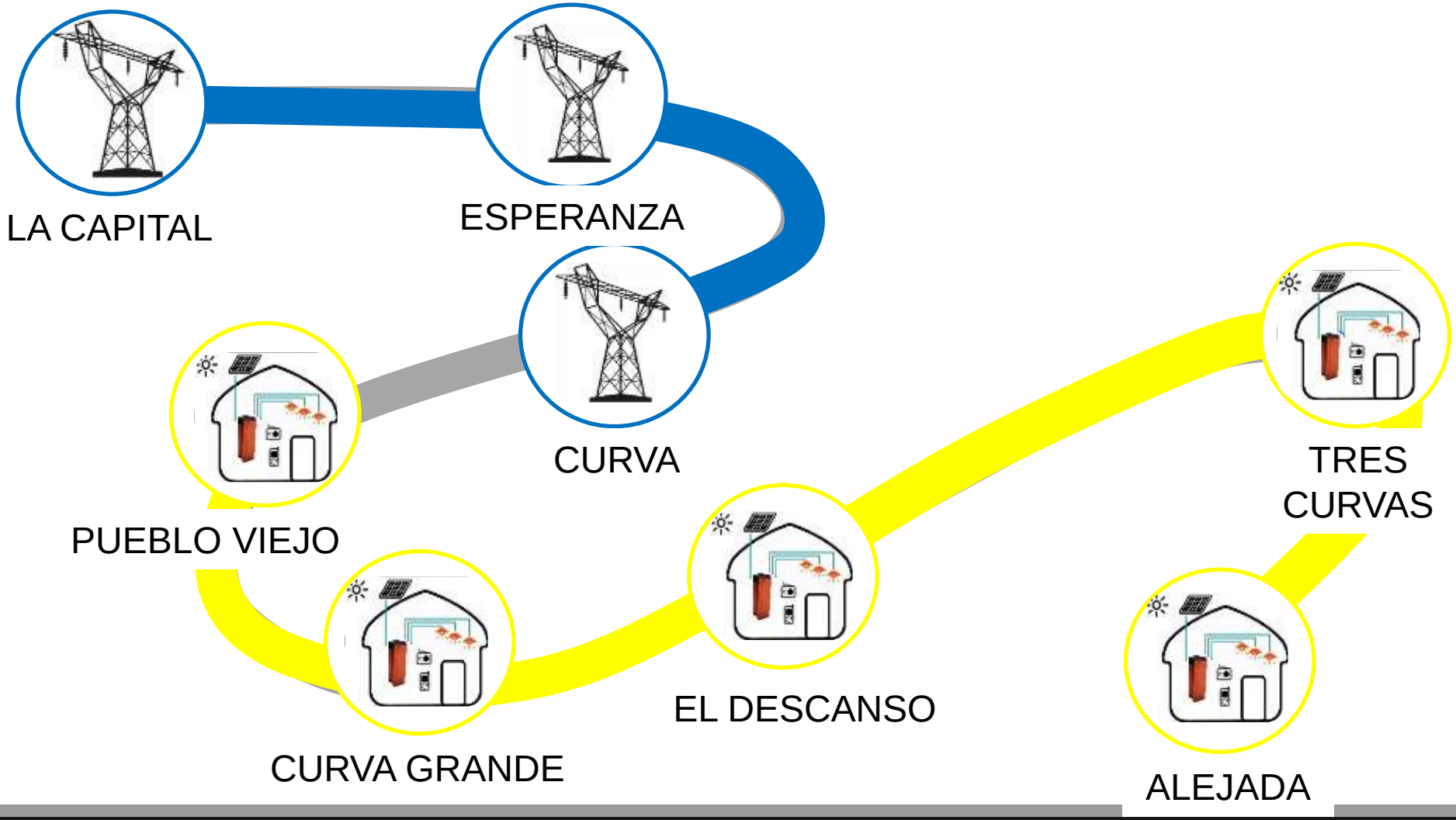
Municipio of COLOMI in numbers

FAMILIES with electricity	5400
FAMILIES without electricity	1561
REQUIRED INVESTION TO REACH UNIVERSAL ACCESS	2.8 M US$

IF THE MUNICIPIO OF COLOMI RESERVES 16% OF THEIR ANNUAL BUDGET EACH YEAR, CAN REACH THE UNIVERSAL ACCESS

While waiting the grid (9 years), is neccesary to have transitorie solutions (picolamps, lithio, etc)

PROCESS UNIVERSAL ACCES TO THE ENERGY



OPTIONS UNIVERSAL ACCES OF ENERGY WITH SOLAR ENERGY

LUCES NUEVAS FUNDACIÓN

PICOLAMP

100 USD.

KIT LITIO SOLAR 7000

380 USD.

270 USD.

KIT LITIO SOLAR
UPGRADE OF OLD SYSTEMS

FINANCIAL STRUCTURE

- ***PAYMENT FAMILIES(*): ……50 %***
- ***PUBLIC MUNICIPIES (MAYOR):……25 %***
- ***COOPERATION OF INSTITUTIONS :……25 %***

(*) Including microfinance services.
this percent can change according the capacity of the families

SOCIAL MICROENTREPRENEUR:

NEXT GENERATION OF THE MICROENTREPRENEURS


punto solar
"CHISPAS"
VILLA 14 DE SEPTIEMBRE
SISTEMAS DE ENERGIA SOLAR
DISTRIBUCION
ASESORAMIENTO
INSTALACIONES
pico lámpara
phocos


phocos
PICO
Lámpara LED
ámparas solares de PHOCOS ...

MICROENTREPREUNER

- Speaks an promote to one family
- Sells technical solutions
- Must have good skills in sellings
- Limited social Impact

SOCIAL MICROENTREPREUNER

- Speaks with a community or autorithies
- Discuss the energy problems with the community
- Good skills in sellings and able to connect to people in community
- Big Social impact, the technical solutions will be implemented with trust (small, medium, large systems). Better conditions to reach Universal Access

MICROENTREPREUNER

- Limited economical incomes

- More visits, posible more sellings, but too expensive

The country shows advances in numbers without understanding the needs

SOCIAL MICROENTREPREUNER

- Better conditions to remain in the economical circuit

- More technified visits to communities, Better conditions to reach Universal Access

MUST BE A PART OF THE UNIVERSAL ACCESS PROCESS…..

MICROENTREPRENEUR…

SOCIAL MICROENTREPRENEUR

If we have the metodologie, we can planify for education, water, health, telecomunications and other basic services.


MARCH FOR THE LIGHT


THANK YOU
logistica.cam@phocos.com

- **<u>Session 3: Developing Capacities and Accelerating Innovation</u>**
- **Developing capacities at all levels to advance SDG 7 and address climate change**
- - Ms. Richenda Van Leeuwen, Senior Energy Expert

Developing capacities to advance SDG 7 and address climate change

Richenda Van Leeuwen
richendavl@gmail.com @VanleeuwenR

UNDESA Expert Group Meeting on "Sustainable Development Goal 7 and its Role in Mitigating impacts from Climate Change"
Marrakech, Morocco
November 13-14, 2016

Goal 7 Targets

- **7.1** By 2030, ensure universal access to affordable, reliable and modern energy services
- **7.2** By 2030, increase substantially the share of renewable energy in the global energy mix
- **7.3** By 2030, double the global rate of improvement in energy efficiency
- **7.a** By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
- **7.b** By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

SDG7 Capacity Development – all levels

Global: Education and advocacy to ensure political support maintained for SDG7 and achievement of targets,. Stay up to date on opportunity: low cost of renewable energy deployment today.

Regional: Development of regional frameworks/tools to support energy access (e.g. ECOWAS draft gender policy)

National: Support national initiatives to drive increased energy access (donor and developing country). Facilitate needed policy change E.g. national planning around LPG cooking gas use (GLPGP)

Municipal/local: Adopt local measures to support low carbon development, focus on development and maintenance of community infrastructure (e.g. schools, clinics).

Individual: consumers inform policy makers about needs and wants, to help tailor solutions effectively, ensure affordability, quality (e.g. IEC and GOGLA standards) and sustainability.

Consider Cross-cutting approaches

Drive synergies across and beyond SDGs

Enhancing understanding and joint approaches at national and global level. Examples: addressing energy aspects of indoor and outdoor air pollution, energy in humanitarian settings: use of renewable energy standalone and micro-grid solutions to provide power for refugee camps, as well as cooking solutions reducing deforestation. Sharing best practices & innovations across UN system, Member States and broader humanitarian sector.

Educate at all levels (two way process)

Focus on innovations/ best practices in technology, policy and financing that can be shared, potentially piloted and then rapidly adopted across a range of settings. E.g. new non-toxic energy storage technologies with cradle-to-cradle certification suitable for island contexts (Aquion Energy in American Samoa), lower cost from emerging solar PV technologies (perovskites), best practices in PAYG and enabling policy at national and regional levels for faster solution deployment. Tariff setting remains a challenge and interplay between grid/off-grid solutions.

Thematic focus on key issue areas

While not duplicating work of entities like SEforAll, look at emerging decentralized grid opportunities, energy and healthcare, energy for education, energy and water, energy for agriculture, energy and sanitation. Priorities may shift over time. Thematic focus can drive attention, financing and create new opportunity (e.g. Clean Energy Ministerial initiatives). Needs to be **intentional** in approach, as may not happen organically (e.g. energy and health sector). UN Energy can play a valuable role in this area.

Building resilience in SIDS

- SIDS facing specific issues around transition from fossil fuels (issues of incumbency), increased vulnerability to and effects from climate change, and the need to bring sustainable energy access to communities. Need for financing for regular development but also to help absorb shocks. Small markets/projects may struggle for financing from private sector. Isolated so need support to share existing and emerging best practices: UN Energy can help maintain government support and strengthen engagement across UN system and external partners.

Examples:

- *Earthspark in Hurricane Matthew in Haiti*
- *Village Infrastructure Angels in Vanuatu building resilience using micro-grids and retrofitted engines for solar crop processing.*

Opportunity of Productivity

Saving 1 hour per day for 250 million women globally that lack electricity

= 100 billion hours/year of productivity

= 50 million peoples' worth of 8-hour days

= entire workforce of the UK or France

by reducing time spent processing crops, fetching water and collecting firewood, etc.

Most women already have the skills to make products worth $1/hour - 200 hours saved per has potential value of $200/year more income - milling costs just $20/year - 10x!

threshing maize

pounding = grinding corn/cassava or hulling rice

winnowing

grating cassava / yams

grinding flour

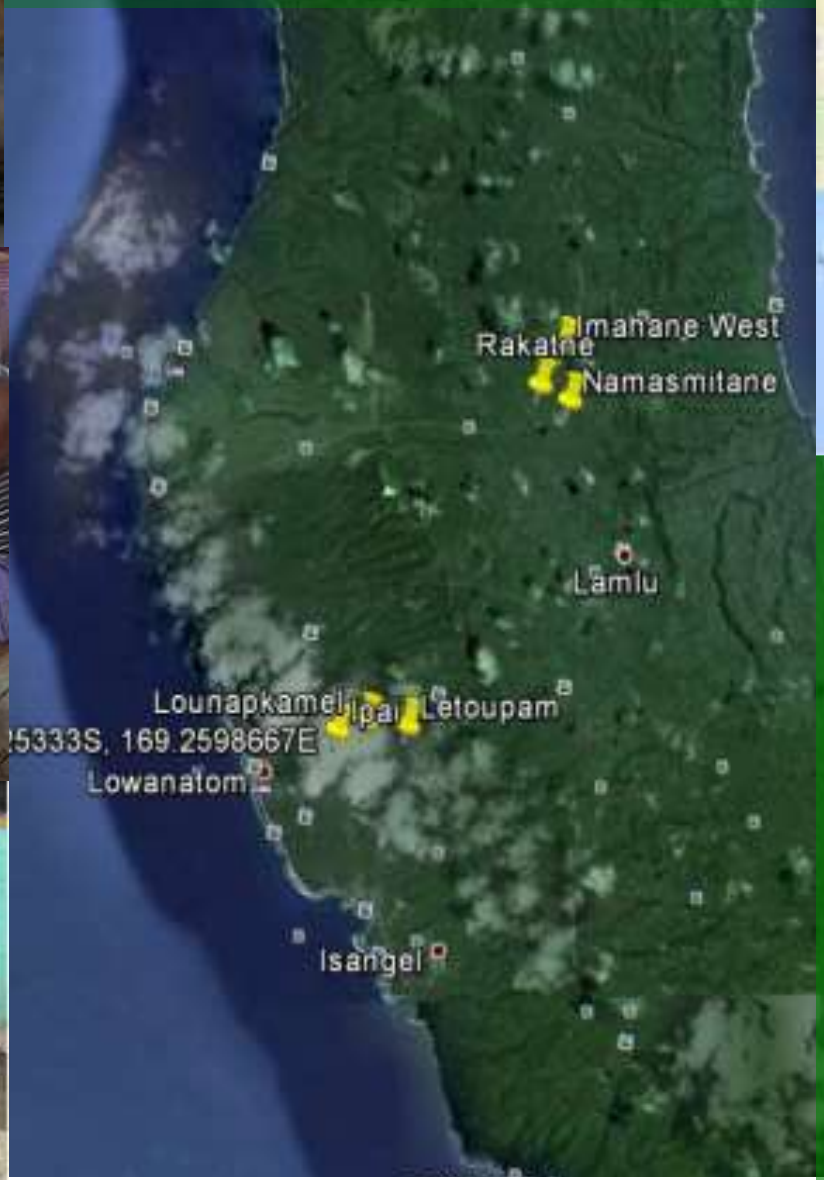
grating coconut

Solar corn sheller + flour grinder

Solar rice hullers + polishers


Cyclone Pam
March 2015

VANUATU PROJECT



2000 - 5000 houses to gain access to solar lighting + solar milling during 2016 - 2018, in 20 - 100 offgrid outer island villages via 3-5 year loans. Includes real-time monitoring of solar mills via "smart grid" M2M sensors

- **Accelerating Innovation: Nexus between energy and other SDGs**
- - Mr. David Bank, Chair, We Care Solar


WE CARE SOLAR


A T. W.
GSGH

The Solar Suitcase

Version 3

- More Reliable
- More Powerful
- Lower Cost


Hamlin
Fistula
Ethiopia

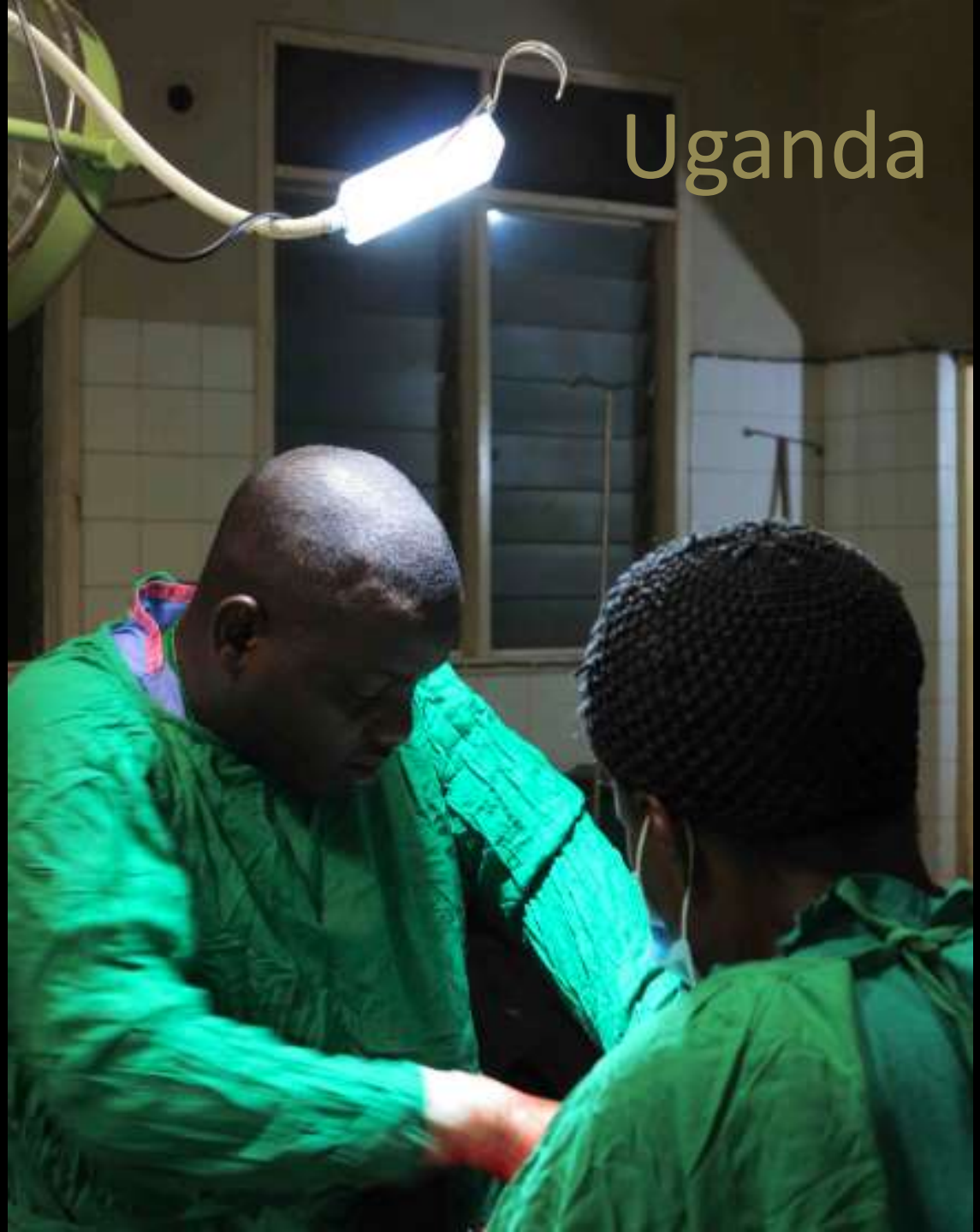
RIO+20

World Health Organization

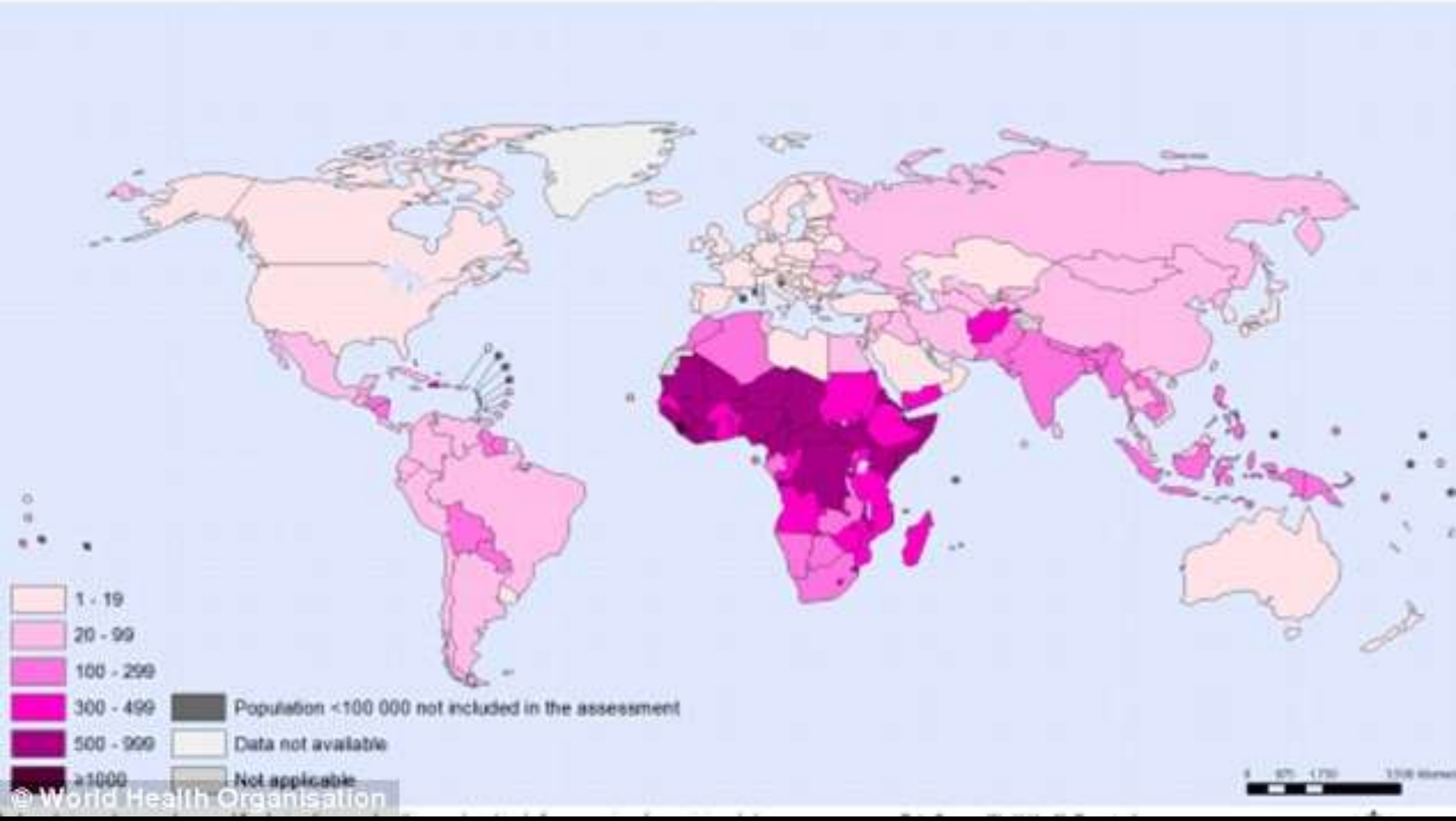
THE WORLD BANK

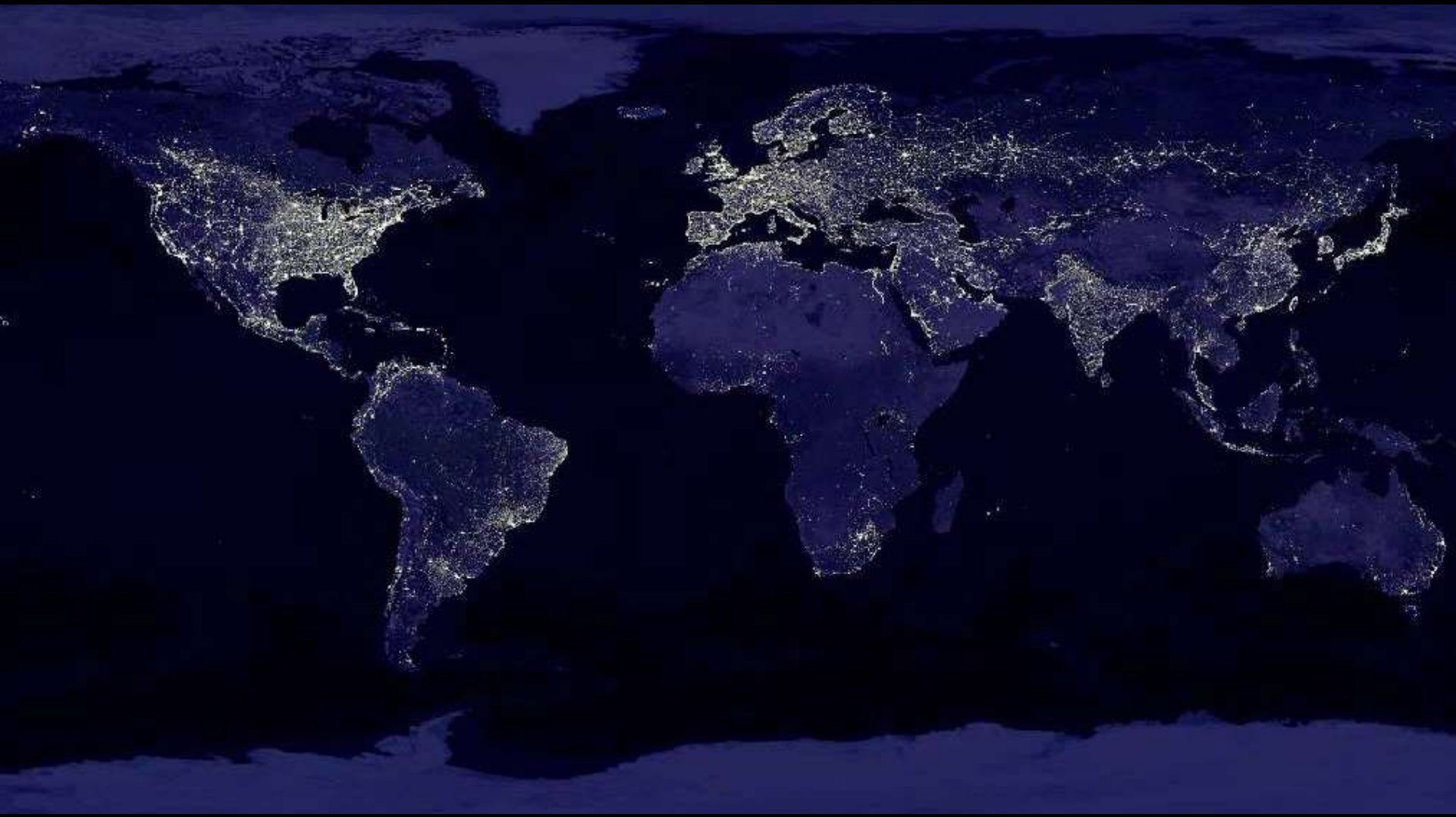
United Nations

UNITED NATIONS FOUNDATION


Uganda

Maternal mortality ratio (per 100 000 live births), 2015






AFGHANISTAN
PAKISTAN
JORDAN
NEPAL
INDIA
MYANMAR
THAILAND
VIETNAM
PHILIPPINES
SENEGAL
GAMBIA
SIERRA LEONE
LIBERIA
NIGERIA
SUDAN
ETHIOPIA
SOMALIA
UGANDA
KENYA
DEMOCRATIC
REPUBLIC
OF THE CONGO
RWANDA
TANZANIA
MALAWI
ZAMBIA
ZIMBABWE
MOZAMBIQUE
PAPUA
NEW
GUINEA
LARGE SCALE PROGRAMS
INDIVIDUAL SUITCASES

Sierra Leone

Partners


Pathfinder
INTERNATIONAL
A GLOBAL LEADER IN SEXUAL
AND REPRODUCTIVE HEALTH


World Health Organization


AMREF
Better Health for Africa


The White
Ribbon
Alliance
For Safe Motherhood


unicef


UNFPA


STIFTUNG
SOLARENERGIE
SOLAR ENERGY FOUNDATION

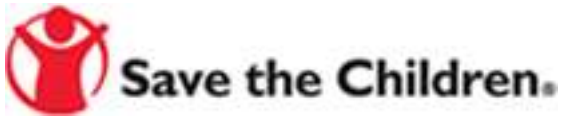

Hamlin
Fistula
Ethiopia


Jhpiego
an affiliate of Johns Hopkins University


care


SAFE MOTHERS
SAFE BABIES


One Heart
WORLD-WIDE


Save the Children.

Nepal


AmeriCares
Emergency Response

Liberia


Boston

























- **UN HABITAT energy work and the New Urban Agenda**
- -Vincent Kitio, Chief Urban Energy Unit, UNHABITAT

Expert Group Meeting on Sustainable Development Goal 7 & its Role in Mitigating impacts from Climate Change
Organized by the Division for Sustainable Development, UNDESA, in cooperation with UNDP Morocco & UNEnergy

UN HABITAT energy work and the New Urban Agenda

Vincent Kitio
Chief Urban Energy Unit
Urban Basic Services Branch

Challenges

- **Cities** consume 75 % of total energy and are responsible for 70 of GHG emission.
- **Buildings** consume 40 % of total energy and are responsible for up to 30 % of GHG emission
- The **transport sector** is responsible for around 20 % of GHG emission.
- Frequent **traffic congestions** and blockage are responsible for huge lost of GDP.
- We need to rethink the ways we plan and design our **cities and buildings**
- Low carbon **design principles** are the way forward.

Urban energy Challenges: poor access

Lack of Energy Access: (1.3 billion people without electricity)

- Limited access to modern energy (electricity and gas) in developing countries:
  - **Per capita electricity consumption** remains very low in Africa around 200kwh/ca compared to 4000-6000 kwh/ca in developed countries.
  - 50 % of energy generation in Africa use fossil fuel.
- Extensive use of firewood and charcoal:
  - Respiratory diseases and deaths especially among women and children (4.3 million deaths per year globally)
  - Forrest depletion, soil erosion and desertification.
- Use of kerosene for cooking and lighting:
  - In-door air pollution: respiratory diseases and deaths
  - Low level of **productive activities after dark**.

Urban energy challenges: Absence of energy efficiency

- No consideration of **energy efficiency**:
  - **Architecture and buildings** that are not adapted to their respective climates,
  - Wastage of electricity and other modern energy sources through **old and inefficient appliances**,
- Absence of adequate **Municipal energy strategy:**
  - Local governments do not have energy policies
  - **Absence of city energy balance.**
- Absence of adequate **urban planning**:
  - Urban sprawl with low density development leading to high **energy demand,** need for **private cars, increased air pollution.**
  - Proliferation of **unplanned settlements** mainly in **developing countries.**
- **Traffic congestion** and blockage
  - No roads and poor streets patterns.

Global initiatives towards Universal Energy Access

United Nations decade of Sustainable Energy for all 2014-2024

SUSTAINABLE ENERGY FOR ALL

Adoption of the Sustainable Development Goals :
SDG Goal 7: Universal access to affordable, reliable and modern energy services

The Paris Agreement on Climate Change
Limit temperature rise 'well below' 2 C by promoting decarbonisation and green economy, renewable energy and financial support to poor countries.

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

UNITED NATIONS
PARIS CLIMATE AGREEMENT
SIGNING CEREMONY
22 APRIL 2016

The New Urban Agenda
Quito, 17-20 October 2016

UN-Habitat's Urban Energy Program

Progress on the implementation of Resolution 25/4:
Implementation of the strategic plan for 2014–2019

23. *Also requests* the Executive Director to continue the work of the United Nations Human Settlements Programme on the provision of urban basic services, including water and sanitation, drainage, waste management, sustainable energy and urban mobility, as well as improving air quality, according priority to a shift towards the provision of sustainable energy and urban mobility and to support the Urban Basic Services Trust Fund and the Global Expanded Monitoring Initiative, and calls upon Member States to consider contributing to the Trust Fund;

24. *Encourages* member States to support initiatives aimed at improving access to sustainable energy and mainstreaming energy efficiency and sustainable energy systems into housing policies and regulations and to support the Urban Electric Mobility Initiative, while promoting hybrid and electric mobility as a priority in conjunction with urban policies in support of compact city planning, energy and resource efficiency, making the transition to sustainable sources of energy and better public transport systems and facilities integrated with safe and attractive non-motorized transport options;

Governing council resolution 25/4 on urban basic services

Urban Basic Services references in SDGs and NUA

Analysis of NUA and Agenda 2030 and its implications for UB

`	Relevant SDGs	Relevant NUA Paragraphs
Basic Services	SDG 1.4, SDG 11.1	2, 14, 29, 65, 70, 85,91, 99
Transport	SDG 3.6, SDG 11.2, 11.6, SDG 13.a	13, 34, 36, 50, 54, 66, 68, 88, 98, 113, 114, 115, 116, 117, 118, 119, 121, 123, 140
Water and Sanitation (incl. Waste management)	SDG 3.3, 3.9, SDG 6.1, 6.2, 6.3, 6.4, 6.5, 6.a, 6.b, SDG 11.6 SDG 12.3, 12.5 SDG 14.1	13, 34, 37, 70, 71, 72, 73, 74, 88, 119, 120, 121, 122, 123,
Energy	SDG 7.1, 7.2, 7.3, 7.a, 7.b	13, 14, 34, 44, 54, 66, 70, 71, 74, 75, 88, 121, 123
Air quality	SDG 11.6	13, 55, 67,
Public spaces	SDG 11.7	13, 36, 37, 53, 67, 97, 99, 100, 109,
ICT		34, 36
Smart city, grid		66, 121

Global initiative towards Universal Energy Access

The New Urban Agenda is guided by the following interlinked principles:

(a) **Leave no one behind,** by ending poverty in all its forms and dimensions,...

(b) **Sustainable and inclusive** urban economies,...

(c) **Environmental sustainability,** by promoting **clean energy**, sustainable use of land and resources in urban development...

The NUA commits to promote **equitable and affordable access to sustainable basic** physical and social infrastructure **for all**, without discrimination, including affordable serviced land, housing, **modern and renewable energy**,…

NUA recognizes that **urban form**, infrastructure, and **building design** are among the greatest drivers of cost and **resource efficiencies**, through the benefits of economy of scale and agglomeration, and **fostering energy efficiency, renewable energy,...**

NUA commits to the **generation and use** of **renewable and affordable energy**..... to give particular attention to the **energy and transport needs** of all people, particularly the **poor and those living in informal settlements**. ….note that **reductions in renewable energy costs** give cities and human settlements an effective tool to lower energy supply costs. …Adoption of **building performance codes** and standards, **renewable portfolio targets**, energy efficiency labelling…to achieve **energy efficiency targets**.

UN-Habitat's Urban Energy Program

The objectives of the Urban Energy portfolio of UN-Habitat are:

- To assist local, regional and national authorities to increase **access to modern, clean and reliable energy services** in urban areas with particular focus on the urban poor;
- To promote **renewable energy technologies in cities** and
- To mainstreaming **energy efficiency measures** in the built environment.

The activities consist of:

- Research and Advocacy;
- Policies review and formulation;
- Awareness creation and capacity building;
- Development of tools;
- Market transformation;
- Development of Financial instruments;
- Demonstration and pilot projects.

UN-Habitat's Urban Energy Program

- **Energy access for the urban poor**
  - Research work to understand energy consumption in informal settlements in developing countries (Africa and Latin America)
- **Energy efficiency in the built environment**
  - East Africa regional project on energy efficiency in the built environment (5 countries)
  - West and Center Africa program on Mainstreaming energy efficiency in the building code. Cameroon, Nigeria and Senegal.
- **Renewable energy technologies in urban areas.**
  - Training the youth on renewable energy technologies for green jobs creation.
  - Promotion of clean technologies (cooking stoves and solar lanterns) through educations to reduce air pollution.
- **Cross- cutting issues:**
  - Covenant of mayors Sub Saharan Africa (advisory board member) to assist local governments to develop **Sustainable Energy Access and Climate Action Plan** (SEACAP).
  - Member of the EE work stream of the Africa EU-Energy partnership.

Understanding the energy consumption in slums

- *"You cannot improve it if you cannot measure it!"*
- Energy use patterns in informal settlements are rapidly changing because of the technological advances, new perceived needs and changes in lifestyles like the penetration of mobile phones in households.

- In Africa, **energy access** remains the main concern for the urban dwellers'. 60 % of the urban population do not have proper access to modern energy. Those with access do not have reliable supply. Biomass remain the major cooking fuel.

- In Latin America more than 95 % of the urban population have access to energy, however energy efficiency remain a key concern. Only of small fraction of the urban poor use firewood for cooking.

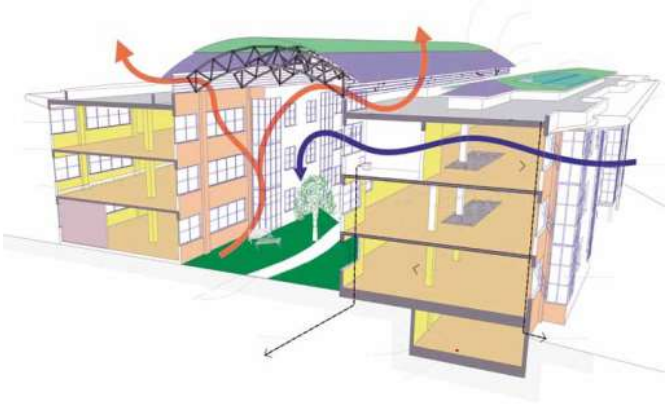
- There are virtually **very limited energy data available** for urban areas.

- **Understanding the energy consumption patterns of the urban poor is a starting point for an informed decisions, policies and actions.**

Decarbonize architecture

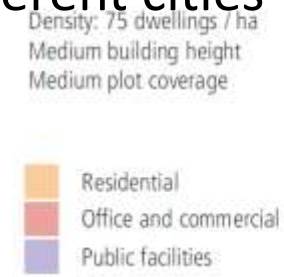
For **architectural and building design** we need**:**

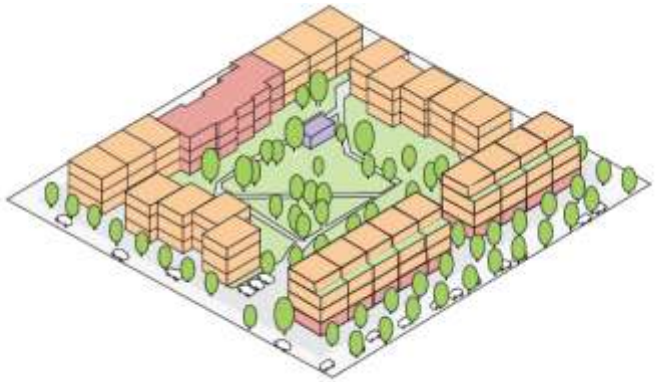
- To design architecture that is suitable to the local context and embrace environmentally sound building design strategies.
- To valorise local building materials and avoid importation of materials unless necessary;
- To minimise the use of artificial and mechanical means to create indoor comfort ;
- To make use of onside natural resources including renewable energies;
- To adopt resources efficiency measures;
- To plant trees and vegetation;
- To Reduce, Reuse and Recycle!



Decarbonize urban planning by adopting new principles

- 1- Adequate space for streets and public space in an efficient street network (**50% of spaces for streets, open spaces and gardens**)
- 2- **Mixed land use** combining (economic and residential activities)
- 3- **Social mix** (integration of affordable houses and services)
- 4- Adequate **density and compact** patterns (an average of 150p/ha)
- 5- **Connectivity** (linking different cities spaces)





Decarbonize the transport and mobility sector.

- We need to Reduce or Avoid the need for travel;
  - By promoting compact city planning, mixed land use, pricing and regulatory mechanisms
- We need to shift from energy intensive modes of transport to **walking**, cycling and use **public transport**;
  - By making cycling and walking safer and attractive; promoting public transport, improving streets design
- We need to improve energy efficiency of our vehicles and their technologies.
  - By shifting to **electric vehicle** uses.

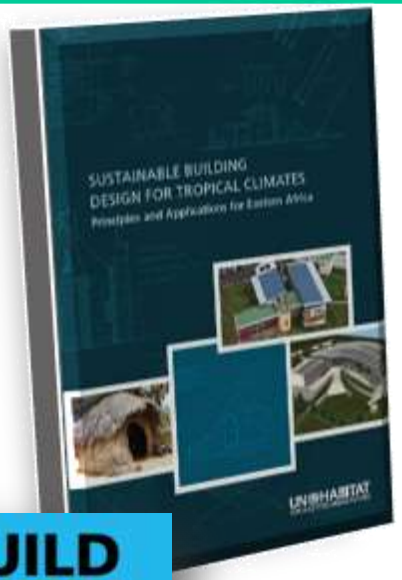



Decarbonisation of neighborhood planning and design.

At the **neighbourhood and urban level**, we need:

- To develop **urban planning** that is environmental friendly;
- To promote **density** in neighbourhood planning;
- To allocate more spaces for streets and public spaces and public services;
- To promote mix zoning with different economic and social activities;
- To avoid ghetto design and promote social mix;
- To promote **energy demand management at all levels;**
- To design for **climate resilient buildings and neighbourhoods**;
- To design onsite waste treatment systems;
- To promote **recycling and valorization of resources at all times**;
- To avoid urban planning that relies on private cars and encourage the use of public transport systems;
- To adopt energy rating and building performance systems;
- To sensitize and educate the public for behavior change.

Mainstreaming Energy efficiency measures in buildings in Africa



Through the project **“Promoting Energy Efficiency in building in East Africa”**, **UN-habitat** assisted the government of Rwanda to develop their building code with a chapter on Sustainable energy.

8 universities in East Africa have adopted a handbook on **Sustainable building design for tropical countries** as a training manual.

A **charter on green building design** has been developed and are being disseminated to demystify green building concepts

Hand-on Training on Energy Efficiency and Renewable Energy for Youth Empowerment

Over 300 youths have been trained on energy efficiency and renewable energy technologies.

Production of improved cook stoves to reduce firewood consumption and indoor air pollution.

Production of charcoal briquettes from grass.

Assembly of solar lanterns to replace kerosene lamps.

During these trainings, youths are trained on how to start their energy business

THANK YOU FOR YOUR ATTENTION

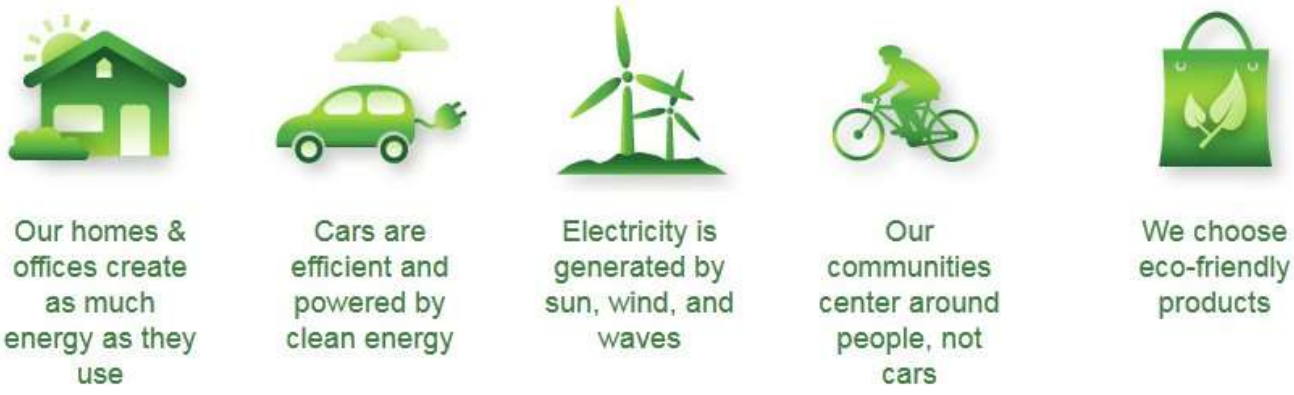
Vincent Kitio

Chief, Urban Energy Unit

+254207624343

vincent.kitio@unhabitat.org

www.unhabitat.org



UN HABITAT
FOR A BETTER URBAN FUTURE

- **Session 4: Implementing SDG7 and the 2030 Agenda**
- **Towards 2030: Global Vision, Policies, and Path Forward**
- - Mr. Luis Gomez Echeverri, Senior Research Scholar, International Institute for Applied Systems Analysis (IIASA)

International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

science for global insight

Toward 2030: Global Vision, Policies, and Path forward

Luis Gomez Echeverri

Senior Research Scholar

International Institute for Applied Systems Analysis (IIASA)

Expert Group Meeting on SDG 7 and its Role in Mitigating Impact of Climate Change

Marrakesh, 13 – 14 November

Outline

- The Global Political Context
- The Global Trends
- Energy and its many linkages - nexus
- Clustering SDGs according to national priorities
- UN Energy Potential Role
- TWI2050 and IIASA

Global Political Context

- SDGs and Paris Agreement - the balanced nature of two agreements have the potential to transform fight against climate change and the development agenda for decades to come - but success dependant on each other
- SDGs – first time ever that global community agrees on comprehensive priority areas for development with actionable agenda with global commitment to reach goals and targets between now and 2030
- For first time ever, climate agreement includes a global commitment for domestic action through the INDCs, coupled with a promise and commitment to mobilize climate finance to support those countries in need

SDG 7 Targets and Indicators

SDG7 – Ensure access to affordable, reliable, sustainable, and modern energy for all

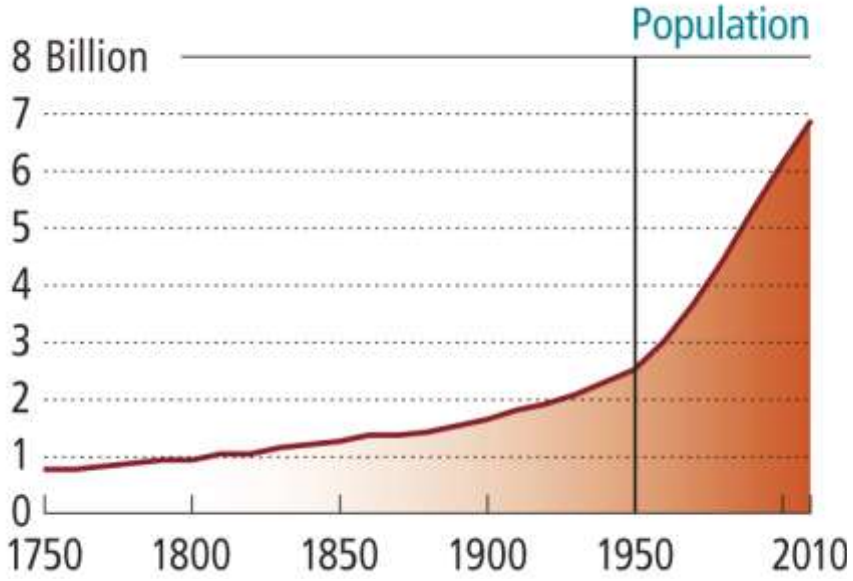
Target	Indicators
7.1 Ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity
	7.1.2 Proportion of population with primary reliance on clean fuels and technology
7.2 Increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 Double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and gross domestic product (GDP)
7a Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment
7b Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a percentage of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

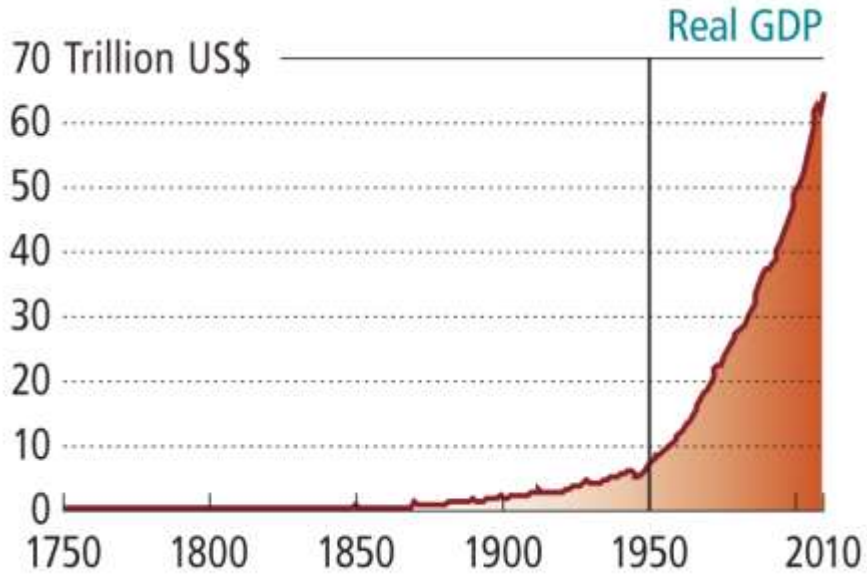
Global Emissions Trends

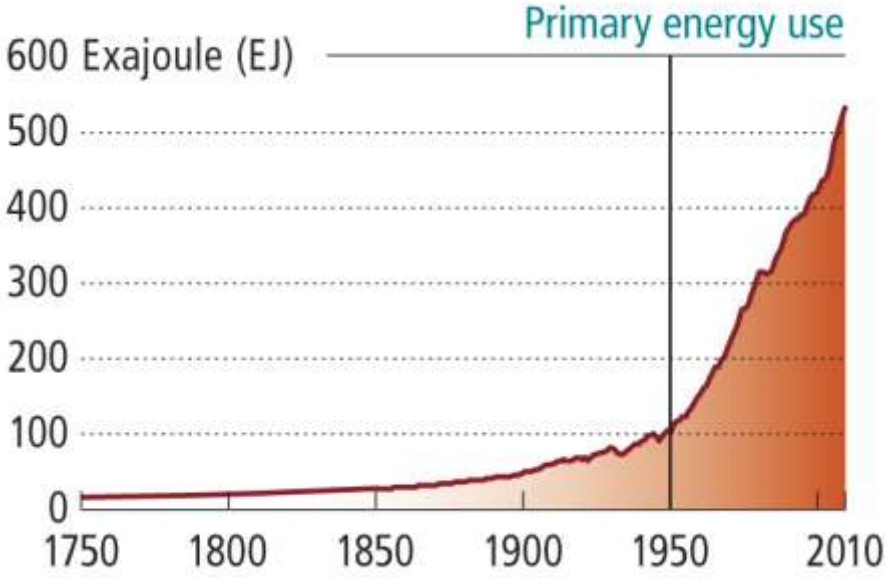
UNEP Emissions Gap Report Key Findings (launched at COP 22)

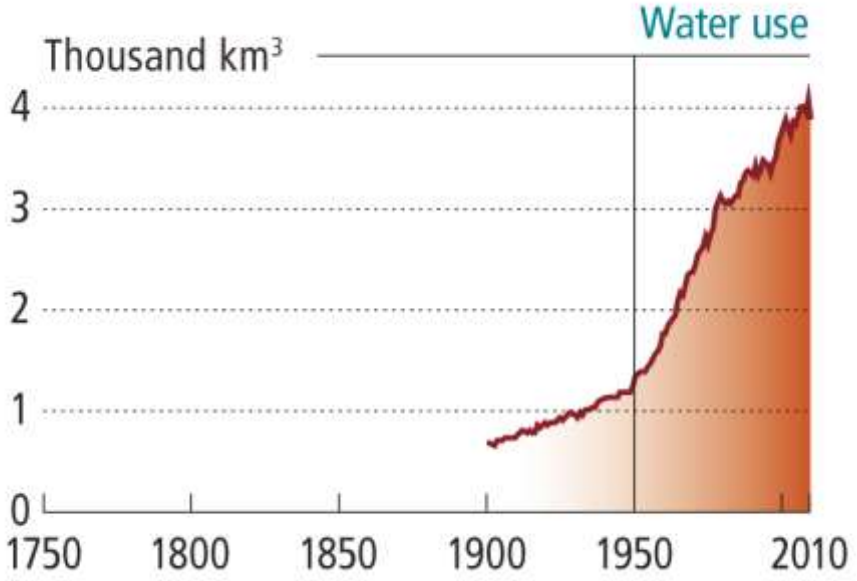
- World is still heading for temperature rise of 2.9 to 3.4°C this century, even with Paris pledges (INDCs)
- 2030 emissions will be 12 to 14 giga tonnes above levels needed to limit global warming to 2°C (even more ambitious targets needed for 1.5 degrees)
- Opportunities that need to be promoted include enhanced pre-2020 action building on Cancun pledges, cost-effective energy efficiency and stimulating action by cities, companies and civil society (i.e. accelerated action on the ground of the type the UN Energy can promote)
- Climate action is intertwined with the sustainable development goals. The earliest impacts of climate change may undermine our ability to deliver the goals by 2030, and failure to deliver on the climate action goal will have even larger implications for maintaining development progress post-2030.

The Great Acceleration



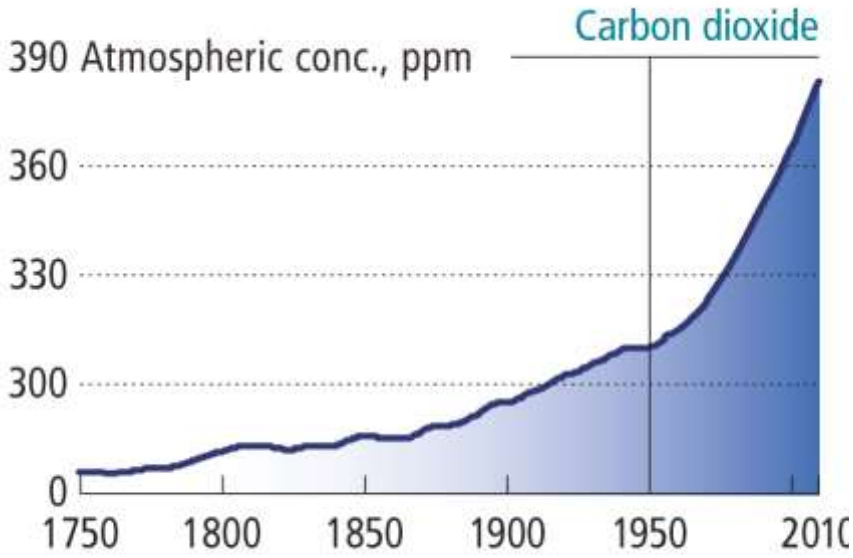


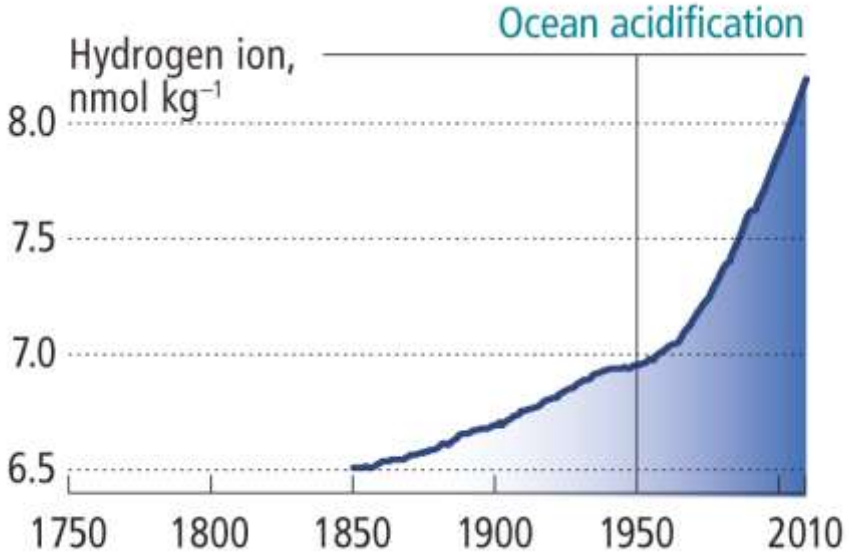


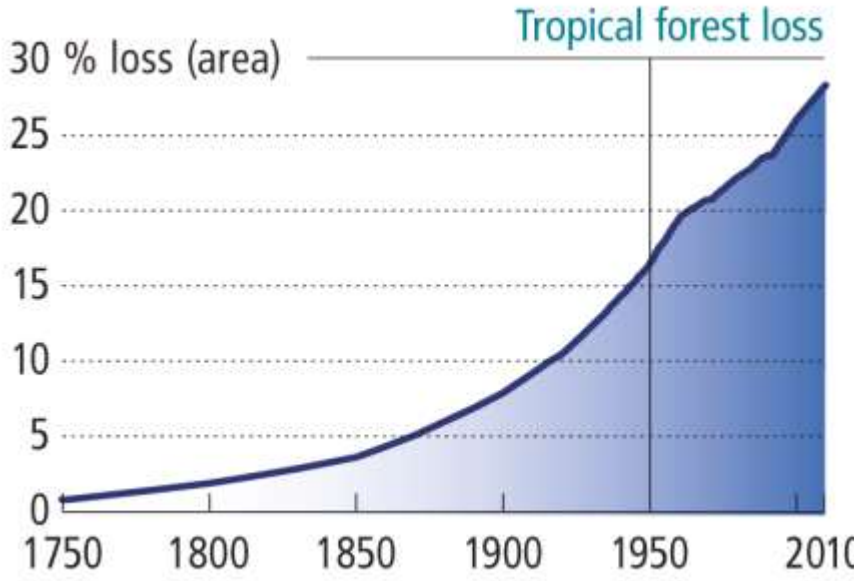


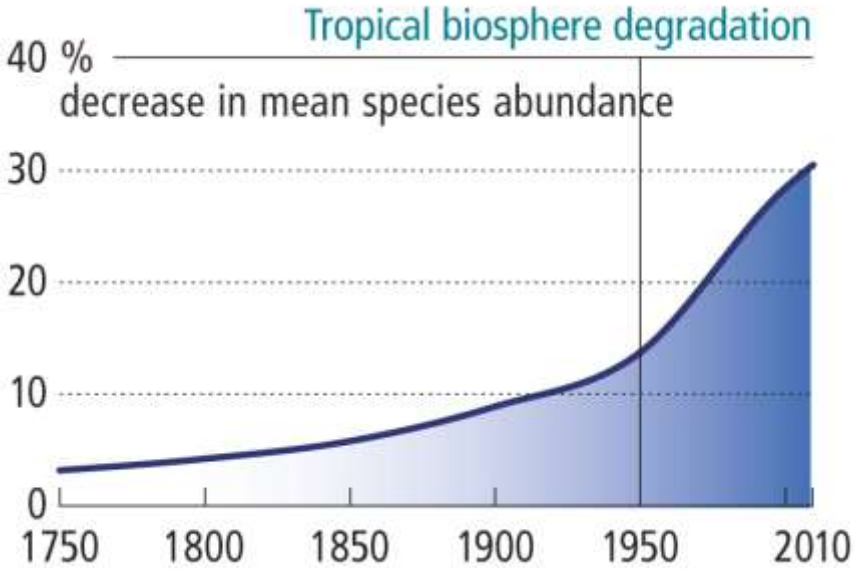
Source: Steffen et al. 2015

The Great Acceleration





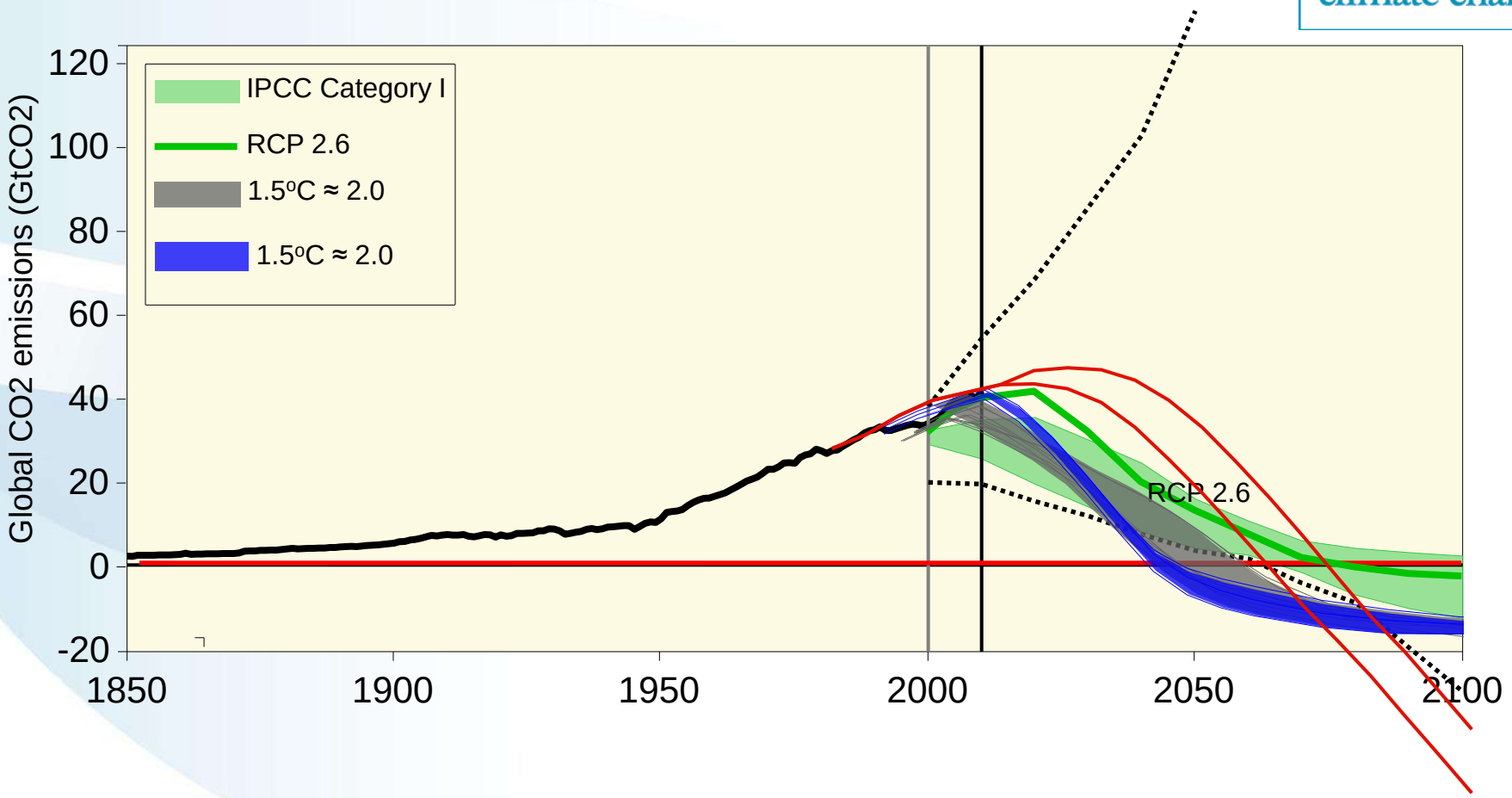




Source: Steffen et al. 2015

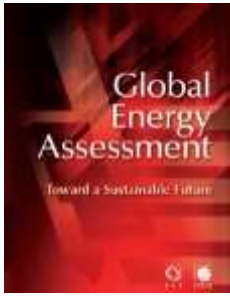
Global CO2 Emissions

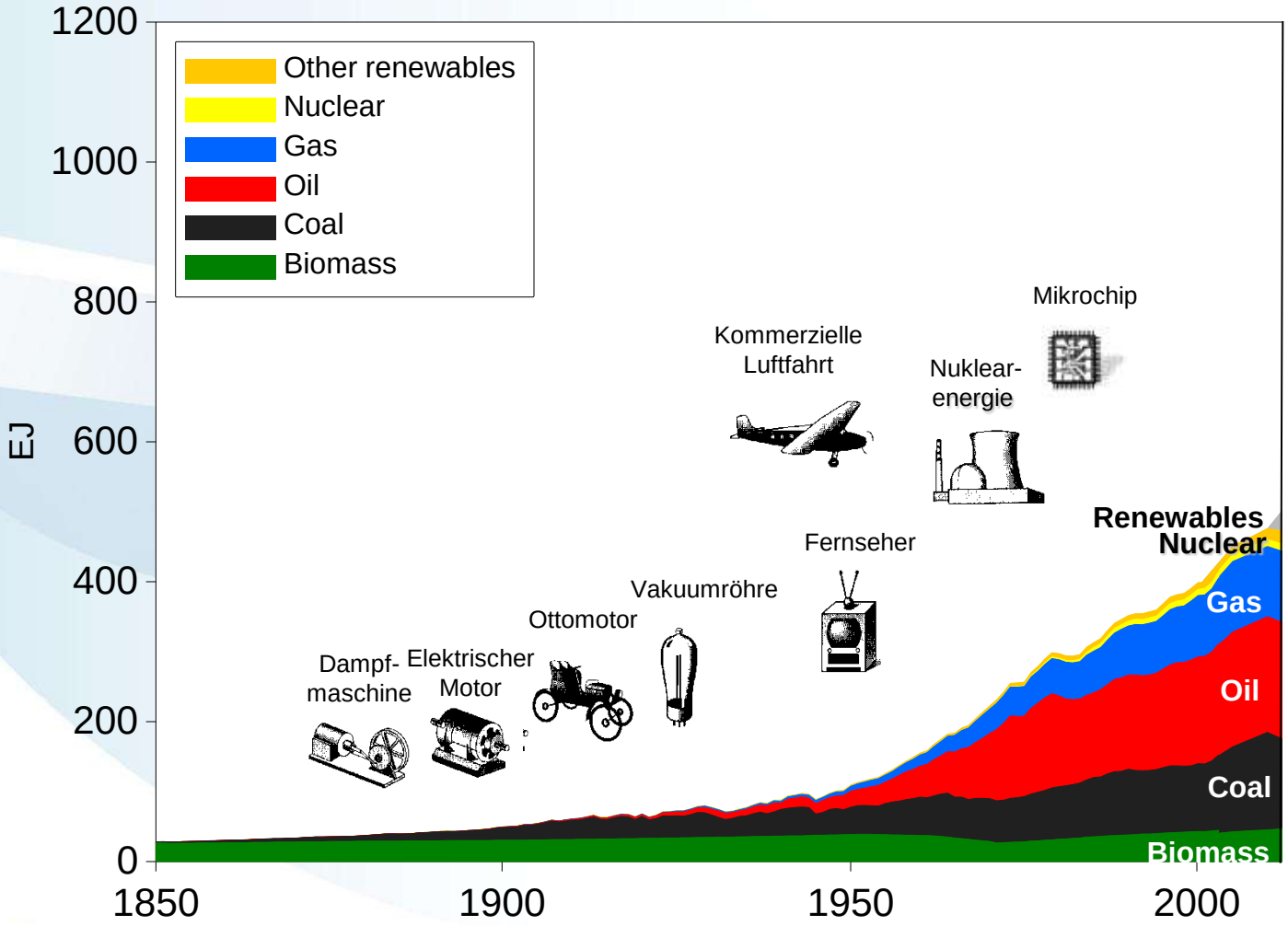
nature climate change



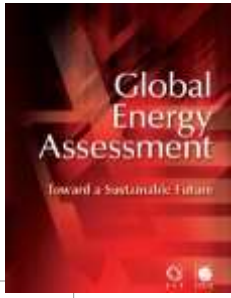
Source: Rogelj et. al, 2015

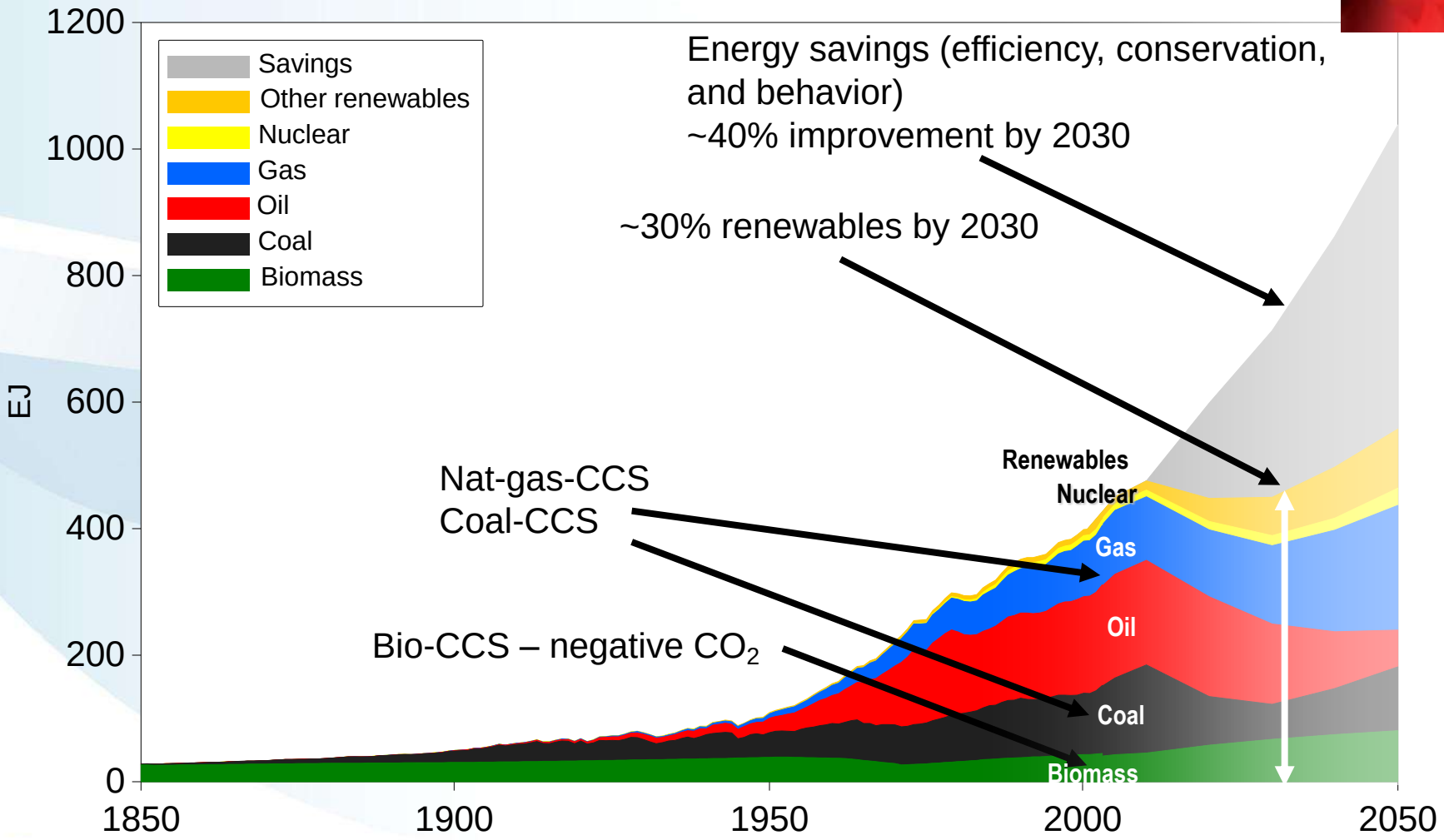
Global Primary Energy
Historical Evolution





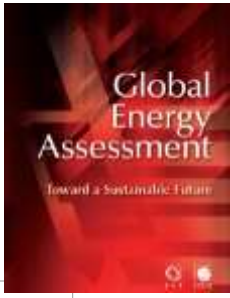
Global Primary Energy
A Transformational Pathway

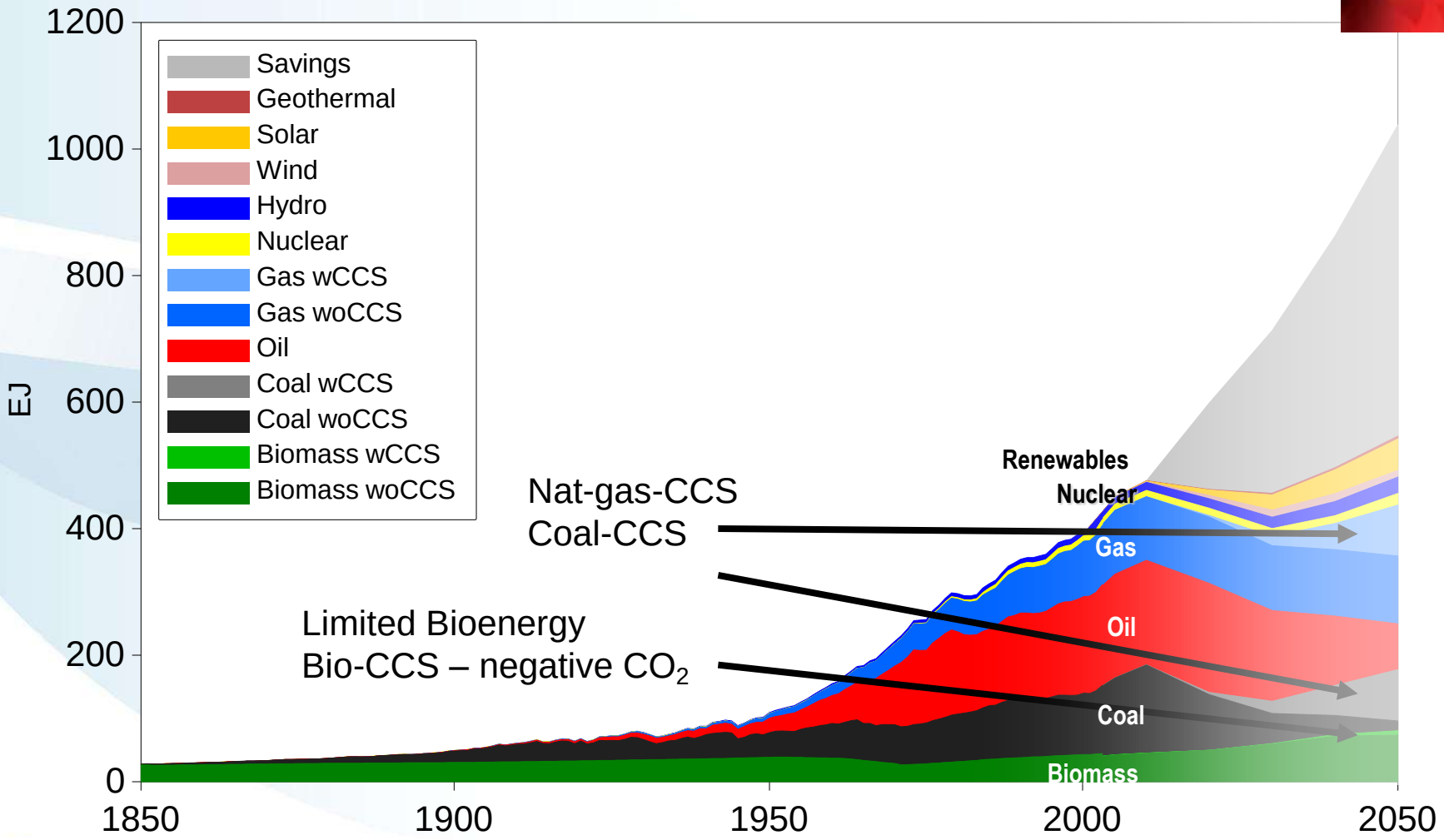




Source: Riahi et al, 2012

Global Primary Energy
A Transformational Pathway

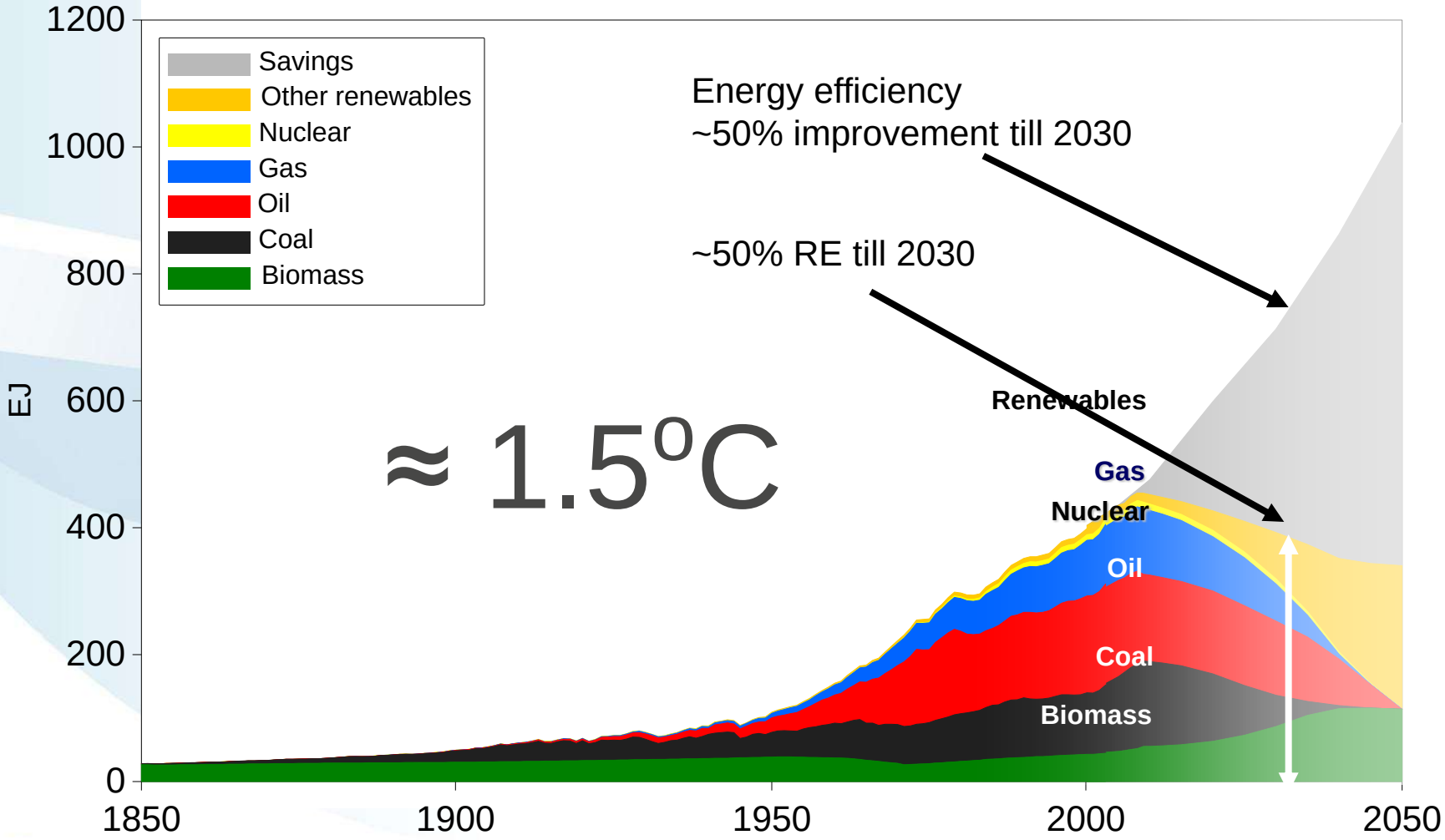




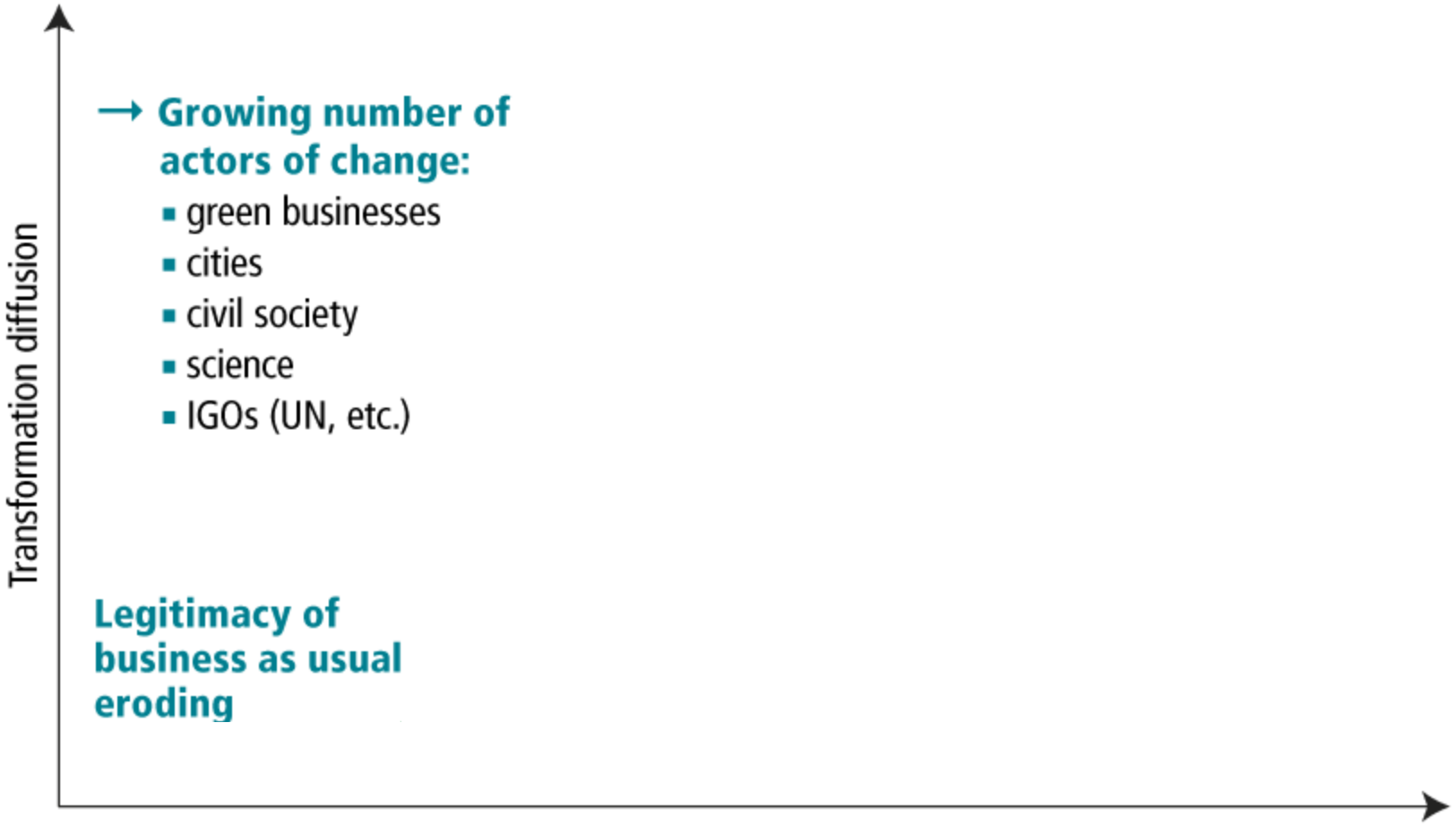
Source: Riahi et al, 2012

Global Primary Energy

A Transformational Pathway

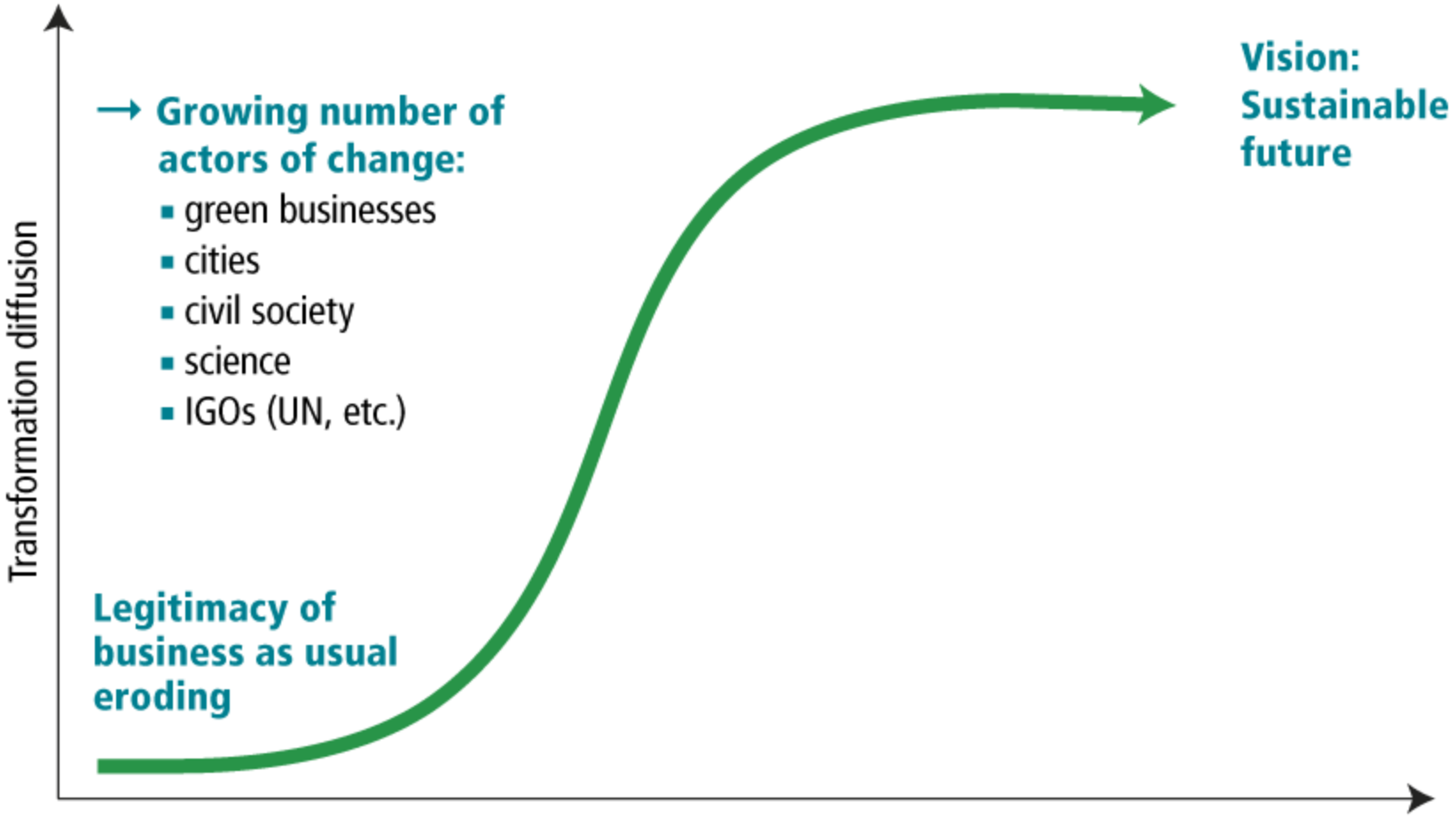


Sustainability Transformation



The World in 2050 TWI2050 Adapted from WBGU 2011

Sustainability Transformation



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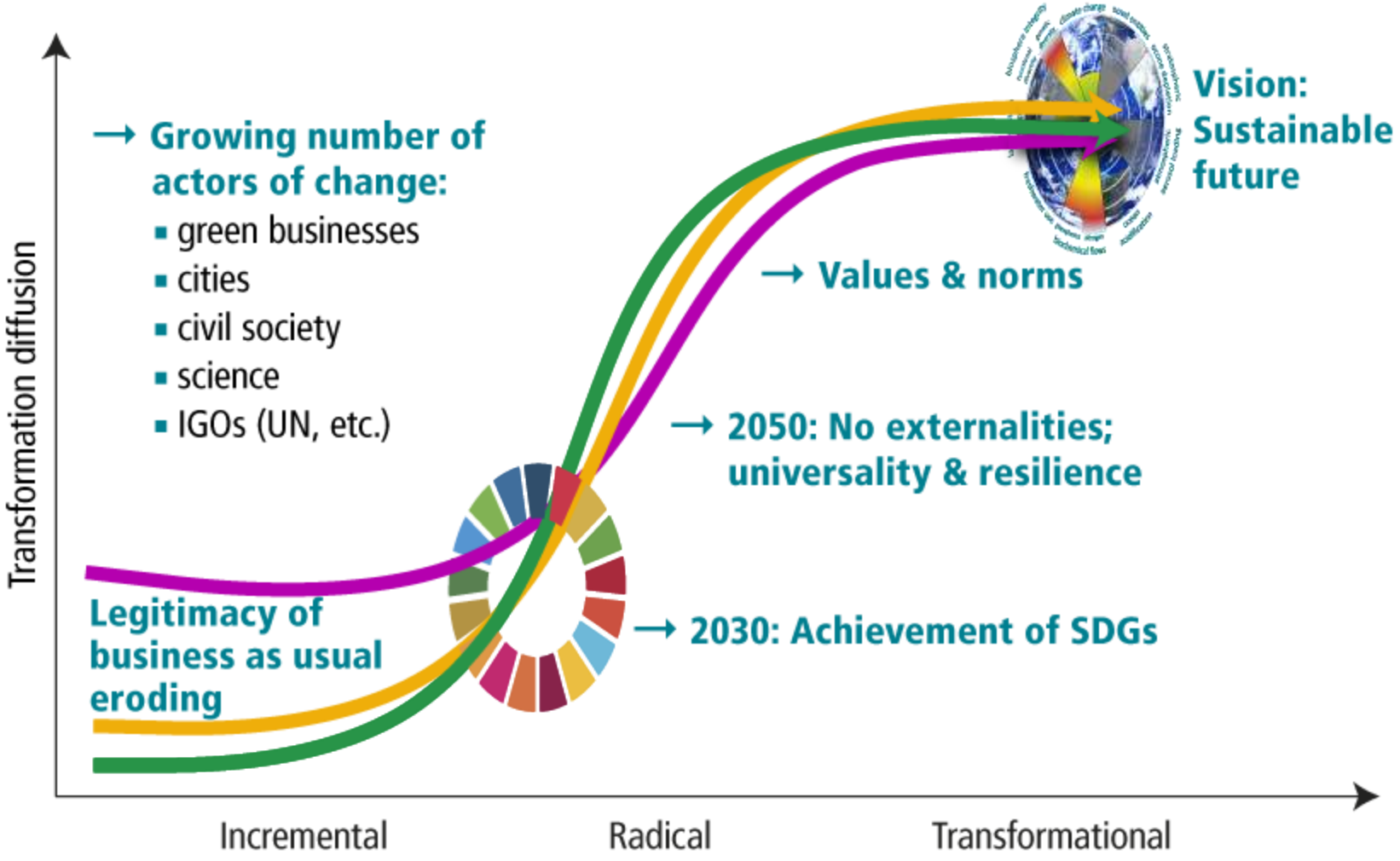
Sustainability Transformation



The World in 2050 TWI2050 Adapted from WBGU 2011

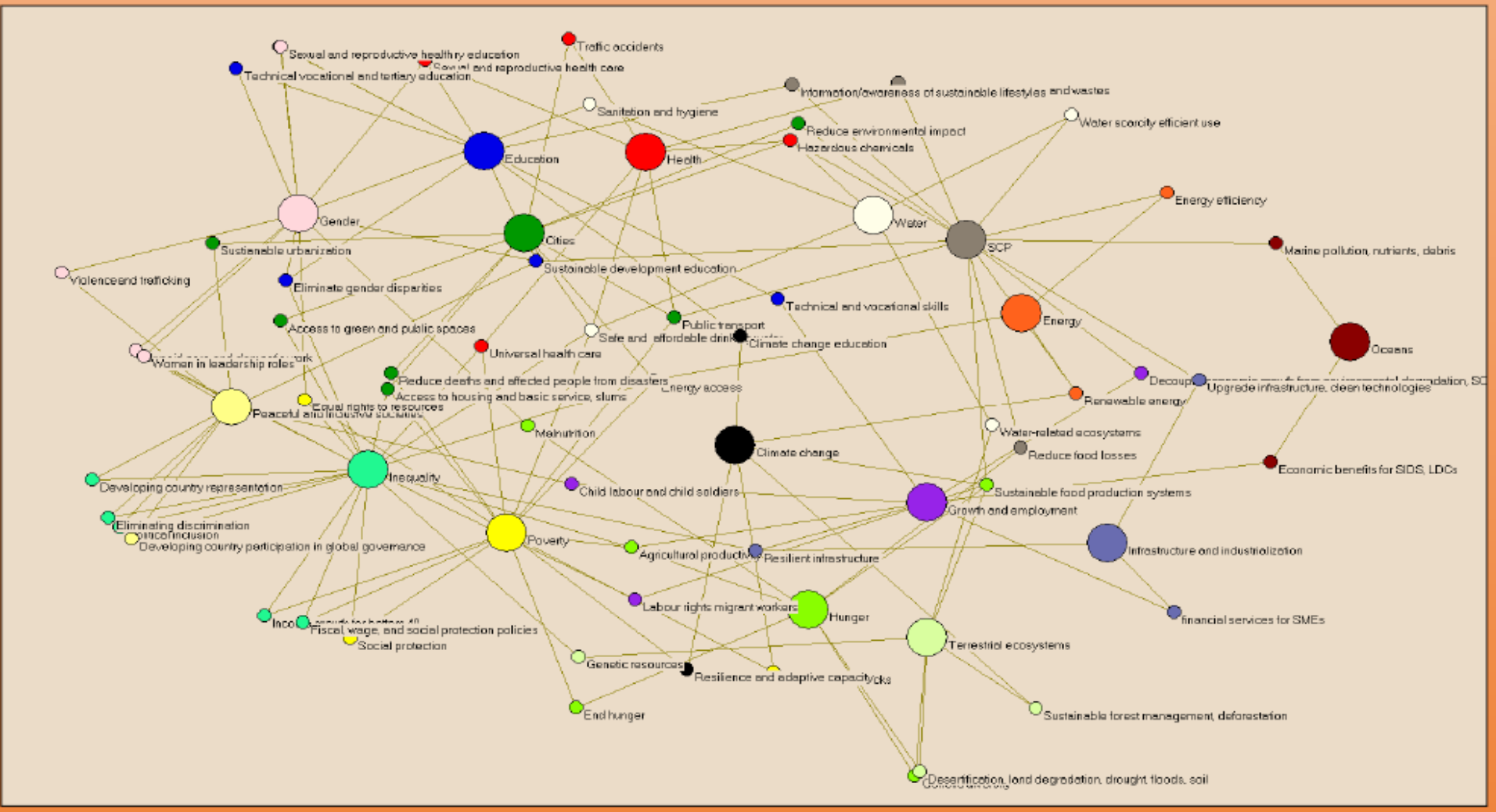
Time Frames and Priorities

- 2015 - 2030 – short term priorities focusing on some concrete urgently needed outcomes (e.g. energy, health, water and sanitation, poverty) and things that need to advance with some well-defined indicators (GHG emissions reduction, etc.)
- 2030 – 2050 – medium term vision – the transformational imperative - setting the stage for realizing the benefits of global development within a safe operating space for the planet and acceptable social boundaries– generating desirable futures and back-casting to generate suitable pathways
- 2050-2100 – long term – a look at what the world would look like with focus on a few drivers (such as urbanization, social organization, technology)

SYNERGIES AND TRADEOFFS BETWEEN AND AMONG SDGs (including SDG7 + others)

- **The implementation challenge**: Success of SDGs and Paris Agreement will depend heavily on ability to pursue integrated approaches and solutions that bring several goals together - but will the institutional and governance fragmentation be an obstacle?
- **The inter-linkage challenge and the knowledge gap**- how the SDGs relate and link to one another – the inter-linkages between the economy, technology, environment – and the potential tradeoffs and synergies are really not well understood – major inter-disciplinary policy analysis, science research and capacity building required
- UN institutions such as **UN Energy** could play an important role in bringing an inter-disciplinary perspective and analysis as well as in providing a platform for partnerships among several stakeholders including public, private and non-governmental - and including inter-disciplinary research, policy analysis and a new generation of capacity development

SDGs as an integrated system



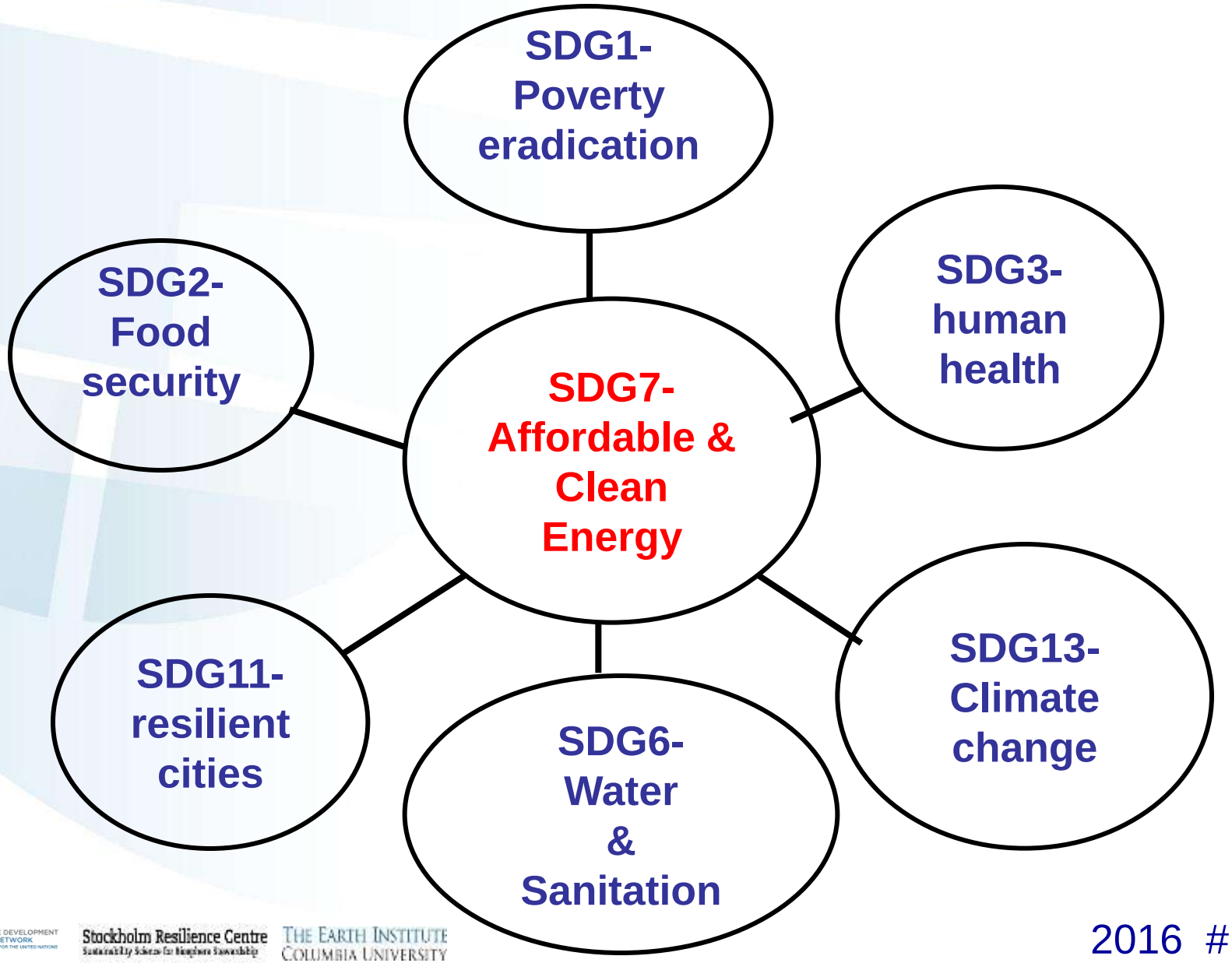
Source: David Le Blanc, "Towards Integration at Last? The SDGs as a Network of Targets", Rio+20 Working Paper 4.

Interdependencies between targets in a nexus: SEI typology

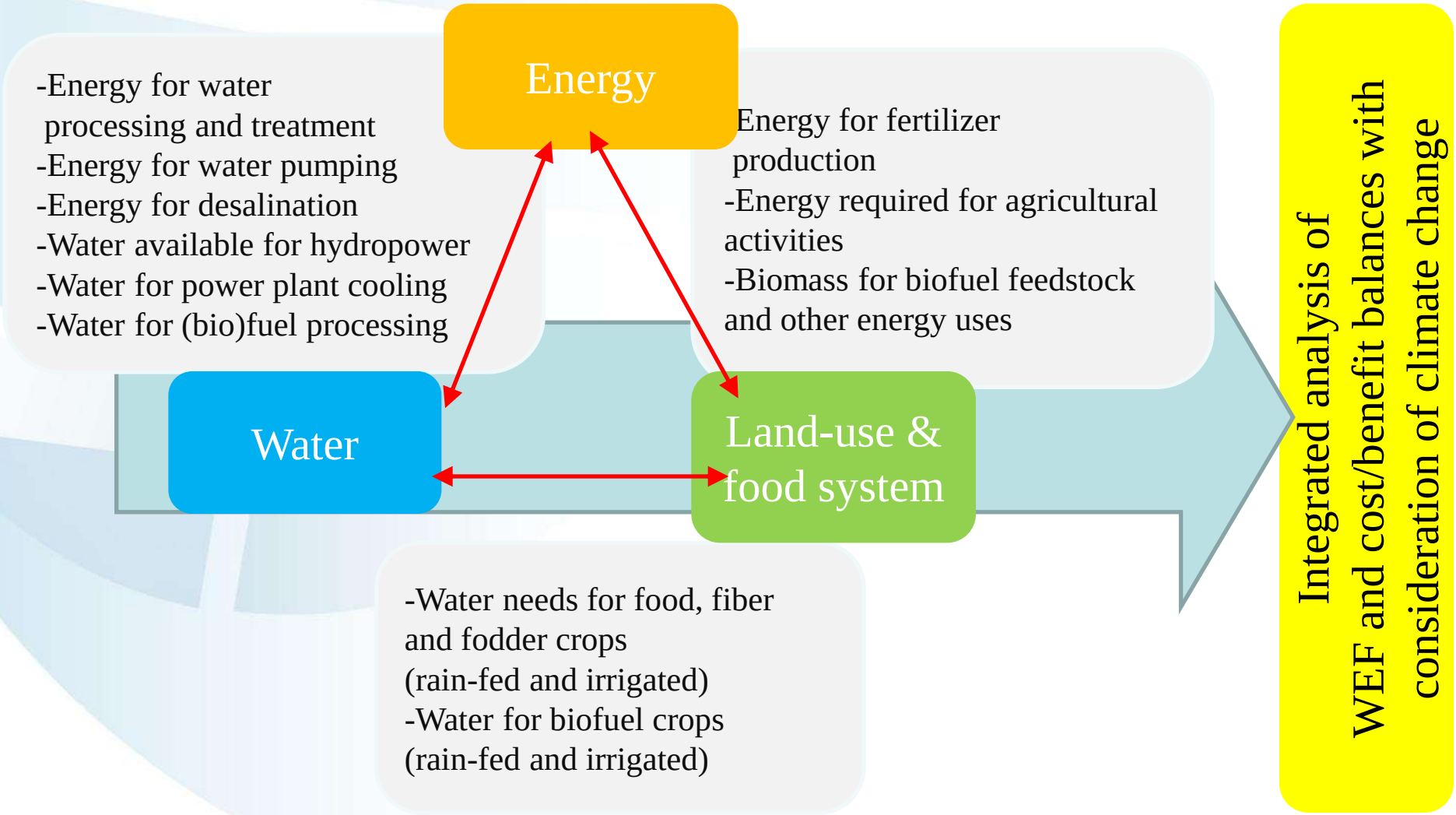
- Achieving one target is dependent on another – water access dependent on energy availability, and vice versa
- One target imposes conditions on another – sustainable management of water resources conditions how access to water is provided
- Progress on one target reinforces progress on another – improving water use efficiency facilitates providing access to water

Weiss, N. *et al.* (2014), Cross-sectoral integration in the Sustainable Development Goals: a nexus approach, SEI Discussion Brief.

Closely linked Goals to Energy Goal



Complexity in quantitative analysis of trade offs – e.g., The WEF nexus



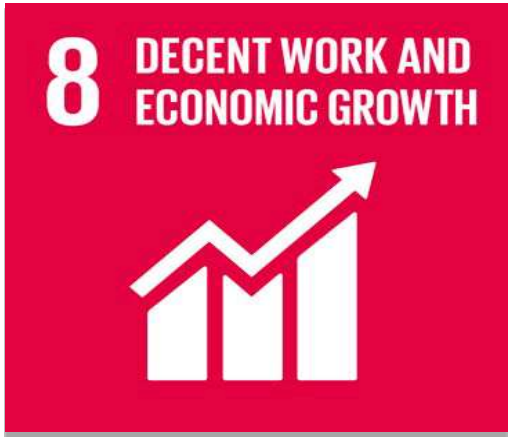
Modified based on Howells et al., 2013. Integrated analysis of climate change, land use, energy and water strategies. *Nature Climate Change.*

Source: eawag aquatic research

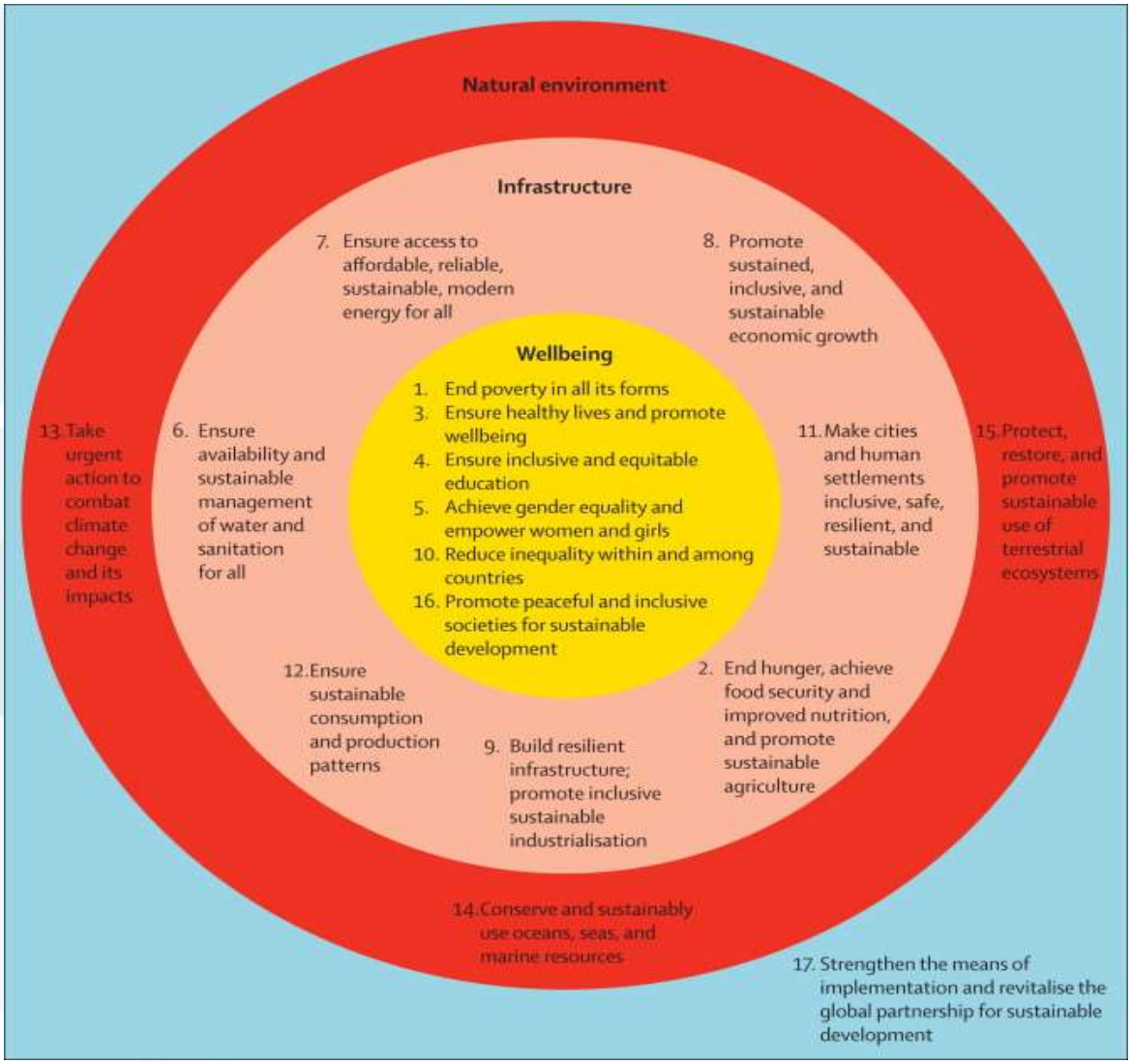
Synergies are everywhere...

”If gender gaps, in participation, hours worked and productivity were all bridged, the world economy would be $28.4 trillion (26%) richer”

(McKinsey Global Institute from Economist Sept. 26, 2015)



Framework for Examining SDG Interactions



Source: Waage et al. 2015 The Lancet

Examplary clustering
Four great transitions

three enabling elements

Financial implications of meeting SDGs in India

- Over $400 Billion as capital investment in production
- Reduces the fossil fuel component from 60% to 50% the -increases to over $500 Billion of capital investment
- Net-zero emissions by 2050, - by 2030 it must reduce fossil fuel energy component from 50% to 27% -cost $675 Billion as capital investment.
- Overall finance required is estimated at $854 billion with an expected gap of $406 billion.

- Source: TERI

Source: TARA, DA, 2015

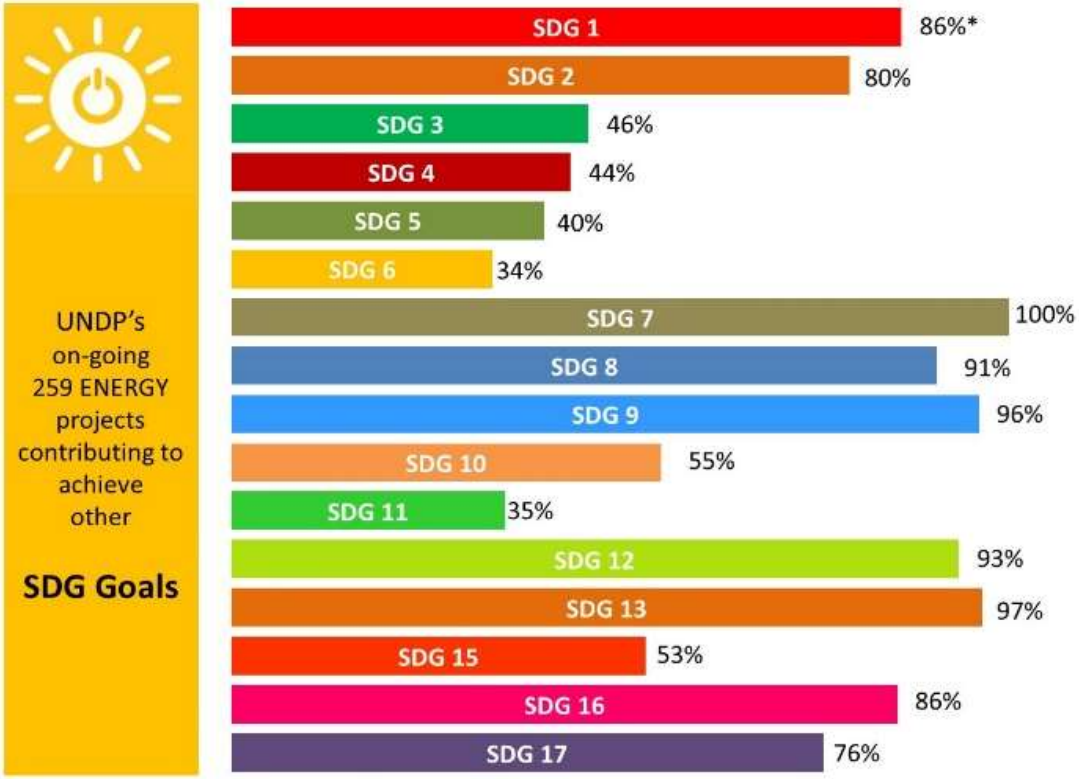
Potential Role of UN Energy

- Providing platform for UN agencies to work together on integrated solutions where energy is either central or impacted by actions
- Identifying clusters of SDGs with different entry points (e.g food security, health, sustainable cities, etc.) where agencies can lead policy analysis, capacity development and planning work in support of countries
- Promoting and supporting the strengthening of UN agency work in the area of energy through analytical work to identify synergies and tradeoffs
- Carrrying out global advocacy and awareness work with governments in support of policy and regulatory reforms
- Providing major platform for knowledge and lessons learned sharing from UN agency work in countries
- Designing a new generation of capacity development programs that are more integrated and cross-sectoral

SDG7 Capacity Development – all levels

Global: Education and advocacy to ensure political support maintained for SDG7 and achievement of targets,. Stay up to date on opportunity: low cost of renewable energy deployment today.
Regional: Development of regional frameworks/tools to support energy access (e.g. ECOWAS draft gender policy)
National: Support national initiatives to drive increased energy access (donor and developing country). Facilitate needed policy change E.g. national planning around LPG cooking gas use (GLPGP)
Municipal/local: Adopt local measures to support low carbon development, focus on development and maintenance of community infrastructure (e.g. schools, clinics).
Individual: consumers inform policy makers about needs and wants, to help tailor solutions effectively, ensure affordability, quality (e.g. IEC and GOGLA standards) and sustainability.

Sustainable Energy is essential for achieving Sustainable Development



SDG	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
No. of Energy projects contributing to achieve other SDGs	223	206	119	113	104	87	259	235	249	143	91	242	250	138	222	197

*Percentage of UNDP's on-going Energy projects contributing to achieve individual SDGs

COLUMBIA UNIVERSITY

TWI2050

Aspiration: A global analytical platform, where leading knowledge science and policy partners on integrated world development and Earth dynamics, join forces to provide state-of-the-art analyses, assessments and scenarios of pathways to attain the SDGs within Earth's safe operating space.

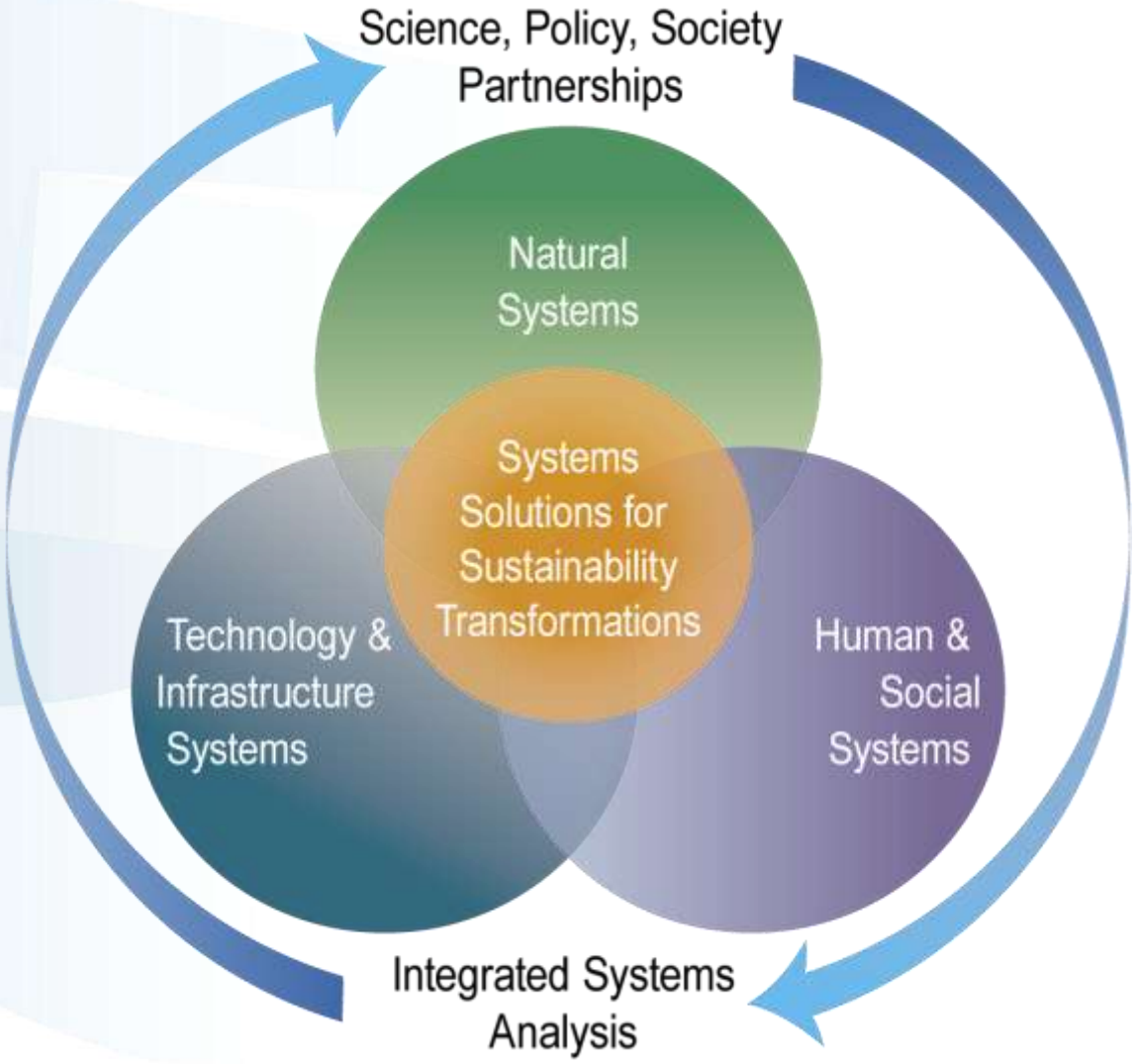
Goal: Harness deep knowledge of specialized institutions from around world (in energy, food, macro-economics, climate, biodiversity, demograpy, etc in an integrated framework – not necessarily into single integrated mathematical model

Rather than examining various future scenarios, TWI2050 will focus on describing a potential SD pathway

The World in 2050 "Consortium"

- AIMES
- Brazilian Federal Agency for the Support and Evaluation of Graduate Education (CAPES)
- Centre for Integrated Studies on Climate Change and the Environment (CIRED)
- Commonwealth Scientific and Industrial Research Organization (CSIRO)
- Earth League, whole Earth system modelling initiative
- **Earth Institute, Columbia University**
- Energy Planning Program, COPPE, Federal University of Rio de Janeiro
- Fondazione Eni Enrico Mattei (FEEM)
- Future Earth
- German Development Institute (DIE)
- Global Ocean Ecosystem Dynamics (GLOBEC)
- Indian Institute International Futures
- Indian Institute of Technology (IIT)
- International Energy Agency (IEA)
- International Food Policy Research Institute (IFPRI)
- International Monetary Fund (IMF)
- **International Institute for Applied System Analysis (IIASA)**
- Intergovernmental Panel on Climate Change (IPCC)
- Joint Global Change Research Institute at Pacific Northwest National Laboratory (JGCRI/PNNL)
- Mercator Research Institute on Global Commons and Climate Change
- National Center for Atmospheric Research (NCAR)
- National Institute for Environmental Studies (NIES)
- National Renewable Energy Laboratory (NREL)
- Organisation for Economic Co-operation and Development (OECD)
- Potsdam Institute for Climate Impact Change (PIK)
- PBL - Netherlands Environmental Assessment Agency
- Research Institute of Innovative Technology for the Earth (RITE)
- Stanford University
- **Stockholm Resilience Centre**
- **Sustainable Development Solutions Network (SDSN)**
- The City University of New York (CUNY)
- Tsinghua University
- UN Population Division
- UN DESA
- UNEP- World Conservation Monitoring Centre (UNEP-WCMC)
- University of Hamburg
- World Bank

IIASA RESEARCH FRAMEWORK



International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

THANK YOU

science for global insight

Gomez@iiasa.ac.at

- **Role of UN-Energy in supporting SDG 7 and developing capacities**
- - Mr. Ivan Vera, Secretary of UN-Energy, UN DESA

Role of UN-Energy in Supporting SDG 7 and Developing Capacities

Ivan Vera
UN-Energy Secretary
Division for Sustainable Development
United Nations, New York

UN-Energy

Activities Supporting SDG 7 2014-2016

- **UN-Energy led the UN Technical Team supporting the definition of the SDG 7 and its targets**
- **UN-Energy led the UN Technical Team supporting the definition of the indicators approved to monitor progress in each of the targets of SDG 7**
- **UN-Energy is supporting the implementation of the 2030 Agenda in particular in relation to the further definition of indicators, assessment of critical issues related to each of the targets, and implementing capacity building activities**

UN-Energy

Activities Supporting SDG 7 2014-2016

- **UN-Energy supported the definition of the SDG 7 and its targets by advising the Open Working Group of the General Assembly**
- **UN-Energy supported the definition of the indicators approved for SDG 7by advising the Inter Agency Expert Group of Indicators and the UN Statistical Commission**
- **UN-Energy is supporting the implementation of the 2030 Agenda by supporting activities of the High Level Political Forum**

UN-Energy

High Level Political Forum

- **Main mechanism supporting the implementing of the *2030 Agenda for Sustainable Development***
- ***Meets every year to discuss issues and review progress on implementation at the national level and progress on each SDGs***
- ***Promotes the participation of Member States in the so called "Voluntary National Reviews"***
- ***Encourage Member States to prepare reports on the implementation of the 2030 Agenda for Sustainable Development***
- ***UNDESA is the Secretariat of the HLPF as well as the Secretariat of UN-Energy***
- ***UNDESA provides Capacity Building support (upon demand) to Member States in the implementation of the 2030 Agenda***
- ***SDG 7 will be discussed in 2018***

UN-Energy

Voluntary National Reviews and Implementation of the 2030 Agenda

Implementing *2030 Agenda for Sustainable Development* implies integrated actions at the national level:

1. **Awareness and Dissemination of relevant information**
2. **Institutional Arrangements**
3. **Full participatory process and ownership (all stakeholders)**
4. **Stocktaking: where countries stand in relation to the SDGs**
5. **Mainstreaming SDG, Targets & Indicators into National Plans**
6. **Defining future scenarios based on national SD criteria**
7. **Monitoring and follow up**
8. **Means of implementation**

Recent Activities Supporting SDG 7

- **Capacity Development events on Mainstreaming Energy SDG, Targets and Indicators into National Statistical Programmes**
- **Expert Group Meetings to assess critical issues in each of the targets of SDG 7**
- **Report on activities by UN-Energy Member Organizations supporting the Decade of Sustainable Energy for All**
- **Incorporating UN regional commissions and UN-Energy member organizations into the Global Tracking Framework effort**

UN-Energy

Conducting Workshops on Mainstreaming

- Introduce the energy SDG , targets and indicators of the 2030 Agenda for Sustainable Development
- Discuss the national statistical programs of participating countries
- Assess global efforts on energy statistics and indicators by different international organizations within the context of the SDGs
- Assess the needs for adapting global energy SDGs, targets and indicators into national circumstances
- Discuss international cooperation to support national statistical programs

Regional Workshops

Three Regional Workshops:

- For the Latin American and Caribbean region in Panama
- For the Asian region in the Republic of Korea
- For the African region in Ethiopia

Participants include:

- Representatives from statistical offices and ministries of energy from 8 to 10 countries in each region
- Representatives from UN Agencies: DESA, UN Statistics Division, DSD, ESCAP, ECA, UNOSD, UNDP, UN-Energy, SE4ALL
- Dev Banks: World Bank, African Union Commission, AfDB, ADB
- Representatives from international organizations: IEA, IRENA, Asia Pacific Energy Research Center
- Representatives from Academia

Outcomes from Workshops

Participants recommended:

- **Continue support in mainstreaming the 2030 Agenda for Sustainable Development in relation to the energy SDG 7**
- **Continue support to enhance and expand statistical programs**
- **Continue international support proving platforms to discuss gaps, best practices and critical issues related to SDGs targets and indicators**
- **Continue a dialogue among participants to ensure knowledge sharing in relation to how best implement SDG7**

Expert Group Meetings

- A platform for all stakeholders for discussion most critical issues affecting progress in the core targets of the SDG on energy
- To assess critical issues affecting progress in all targets of SDG7
- an opportunity to exchange knowledge on policy, technical and entrepreneurial approaches
- To promote dialogue among practitioners, experts, donors and policy-makers
- To Discuss ways to apply models and best practices to allow the scaling up of the use of clean cookstoves and stand-alone renewable energy systems
- To Identify best practices and lessons learned and sharing international and country-level experiences
- To discuss latest developments related to renewable energy products, systems and services

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First Expert Group Meeting on Target 7.1

- The first EGM on Target 7.1 (Universal Access) represents the first on a series of events being organized by UN-Energy.It took place at ESCAP , Bangkok
- 60 participants from 20 countries and 17 organizations including UN agencies, banks, private sector, governmental organizations, NGOs, practitioners, etc.

OUTCOMES: A series of recommendations in relation to

- Strengthening monitoring and reviewing of progress on universal access
- Assessing appropriate technologies for widening access
- Defining strategies, enabling factors and effective policies to accelerate access
- Financing, capacity development and others Means of Implementation
- Pursuing a nexus approach to energy access
- Conducting EGM for each of the targets of SDG 7

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Second Expert Group Meeting on Energy & Climate Change and Implementing SDG 7

- A platform to exchange knowledge and efforts related to energy and climate change
- Taking place on the margins of COP22 in Marrakesh November 2016
- An opportunity to review efforts and experiences at the regional and national levels
- An opportunity to discuss important programmes and activities by member organizations of UN-Energy
- An opportunity to discuss UN-Energy efforts supporting SDG 7
- An opportunity to discuss strategies for the UN system to accelerate the implementation of SDG7 and the 2030 Agenda

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Report on Activities Supporting the Decade

- Report posted on all websites
- 20 members of UN-Energy reported supporting activities
- An opportunity to exchange knowledge on policy, technical and entrepreneurial approaches
- To promote dialogue among practitioners, experts, donors and policy-makers
- To Discuss ways to apply models and best practices to allow the scaling up of the use of clean cookstoves and stand-alone renewable energy systems
- To Identify best practices and lessons learned and sharing international and country-level experiences
- To discuss latest developments related to renewable energy products, systems and services

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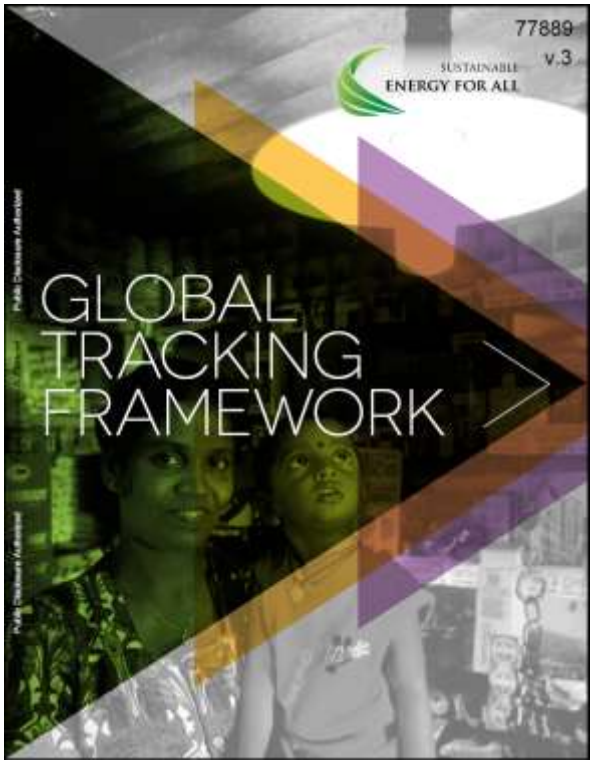
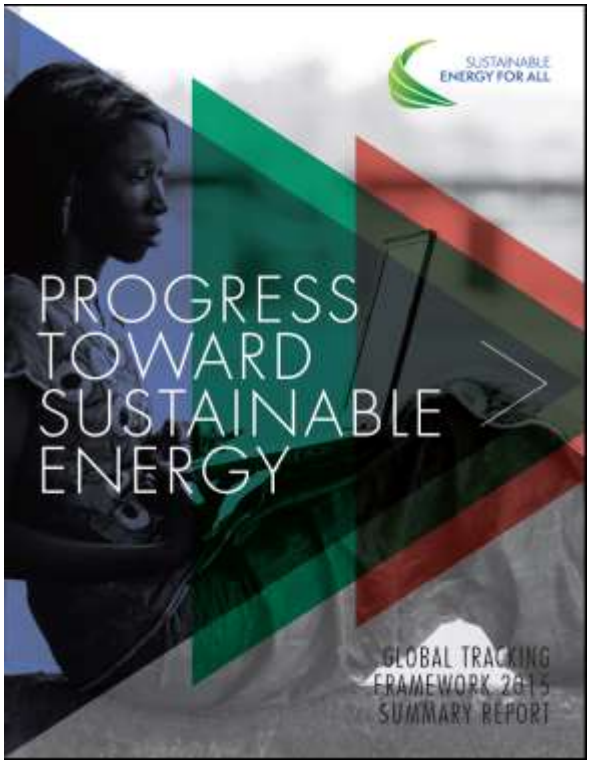
Sustainable Energy for All

Global Tracking Framework 2015 2017





- **Promote participation of all UN member organizations**
- **Promote participation of all UN Regional Commissions**

Moving Forward

- Continue providing platforms for knowledge exchange, capacity building and international cooperation
- Continue developing a more comprehensive set of energy indicators - disaggregated and linked to other SDGs (Nexus Indicators)
- Continue aligning all the efforts supporting SDG 7 with activities supporting the Decade and the Global Tracking Framework
- Start preparing for 2018 when SDG7 will be debated in the HLPF
- Continue improving coordination of efforts among UN agencies at global, regional and national levels
- Continue defining a Proposed Programme for Accelerating Implementation of SDG7

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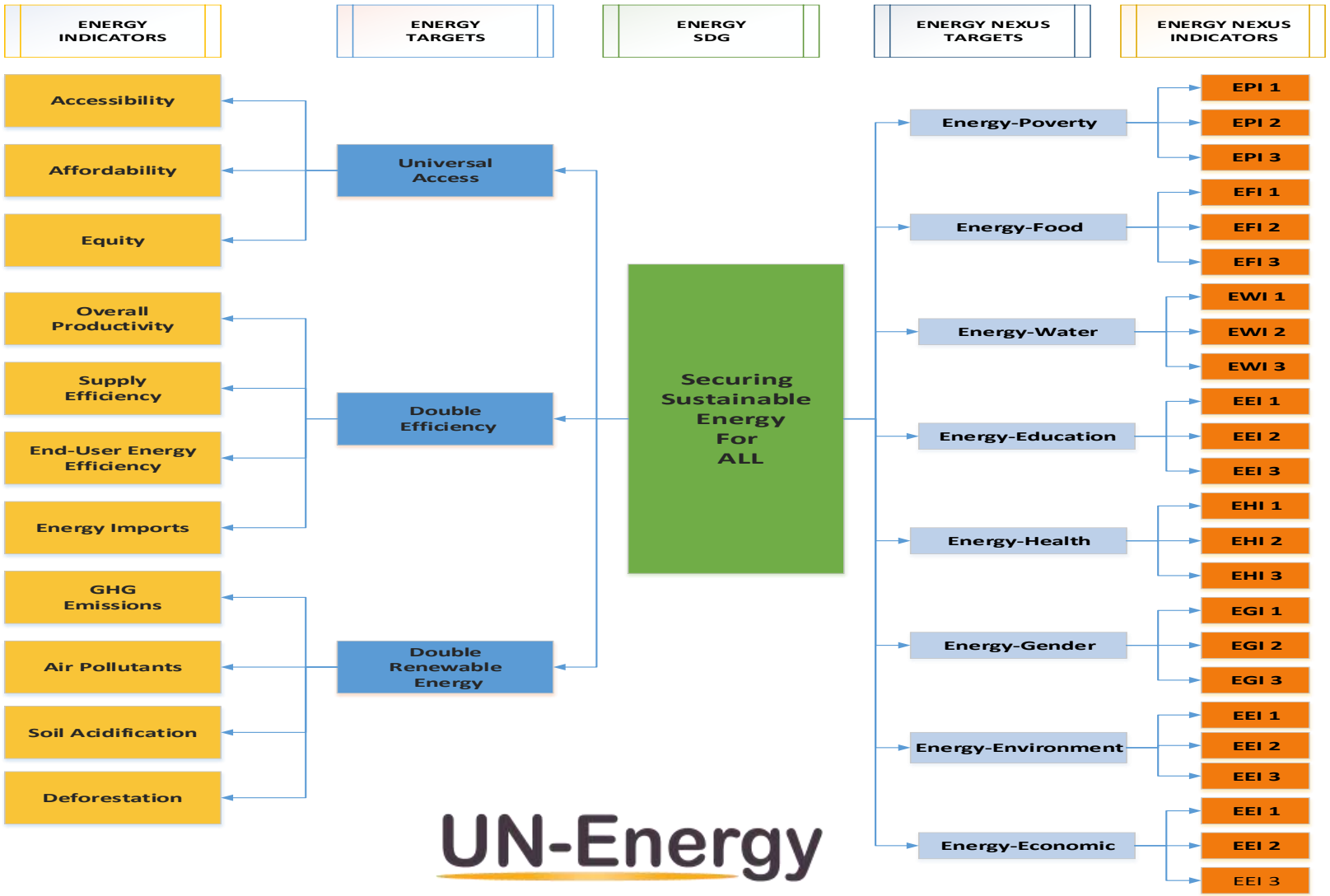
SUSTAINABLE ENERGY FOR ALL

Energy
SDGs, Targets & Indicators (Nexus)



Possible Energy Nexus Targets / Indicators

Nexus Energy - Health

- Ensure electricity & sustainable energy access to a**ll health centres** of the world
- Eliminate all **premature deaths** resulting from indoor pollution from polluting fuels

- **More than 4 million premature deaths** per year due to **indoor air pollution**

Nexus: Energy /Education

Nexus Target
Energy - Education

- Ensure electricity access to all primary schools of the world
- 30% primary schools without electricity

Thank you!

Ivan Vera
UN-Energy Secretary
Division for Sustainable Development
United Nations, New York

UN-Energy

- **Accelerating SDG7 implementation: Strategic focus for the UN system**

- Mr. Minoru Takada, Team Leader (Energy), UN DESA

Accelerating SDG7 implementation: UN system's roles

in support of the 2030 Agenda for Sustainable Development

Minoru Takada
Team Leader (Sustainable Energy)
Department of Economic and Social Affairs
United Nations

14 November 2016, Marrakech, Morocco

CONTEXT

- Sustainable Development
  - SDGs including SDG7
  - Paris Agreement on Climate Change

- UN as a catalyst for change
  - Convene inclusive dialogue
  - Agenda setting
  - Integration & aggregation

UN-ENERGY

- Leverage strengths and existing capacities/initiatives of UN organizations and partners

ADVOCACY, CAMPAIGNING AND SHARING EXPERIENCES

- Common narrative/message
  - Global
  - Tailored to regional/national circumstances
- Advocacy/campaign on key issues
- Sharing experiences
  - Multi/cross-sectors
  - Multi-stakeholders
  - North and South

CAPACITY BUILDING

- Global strategy/approach in support of SDGs
  - Context
  - Content
  - Process
  - Actors

- Partnership-based platform for capacity building (New generation of capacity building approach)

PARTNERSHIPS FOR NEXUS APPROACH

- Nexus partnerships
  - gender, health, water, food, education, cities, humanitarian response etc.

- Synergies between SDGs and Climate processes (e.g. initial focus on NDCs)

MONITORING

- Refinements of existing SDG7 indicators
- Nexus indicators (new)
- Monitoring system capacity
- Keeping UN system in check

Inter-governmental Cooperation on Energy

- Ways to strengthening intergovermental dialogues on energy (Secretary-General's report)

ACTION TOWARD REVIEW OF SDG7 IN 2018

- Support National Voluntary Reviews of SDGs

- Develop global synthesis of “next steps” on SDG7 implementation
  - Means of implementation (e.g. capacity building, finance, innovation, monitoring and knowledge sharing)
  - Focus on Nexus
  - Partnerships

- Organise Global Conference on SDG7 Implementation
  - Establish Task Tracks with focus on nexus and MoIs
  - Every other year
  - Alliance with existing global/thematic processes
    (e.g. IRENA, VEF, SE4All, Africa-EU, WEC)

- High Level Political Forum 2018 to review SDG7

NEXT STEPS

- **Renewable energy and climate change**
- Elizabeth Press, Director, IRENA

REmap
A Renewable Energy Roadmap

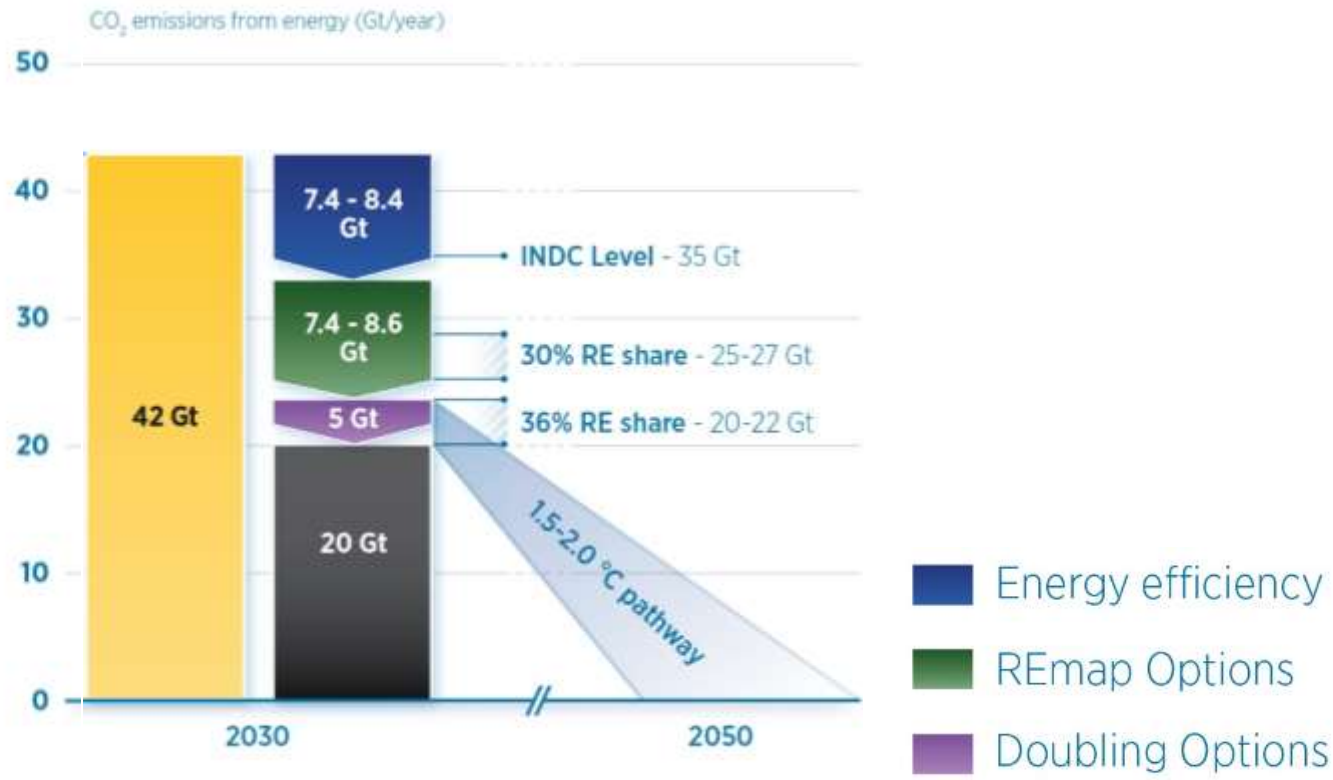
IRENA
International Renewable Energy Agency

#REmap

Decarbonisation pathways to 2050

Marrakech, November, 2016

Role of renewable energy and energy efficiency

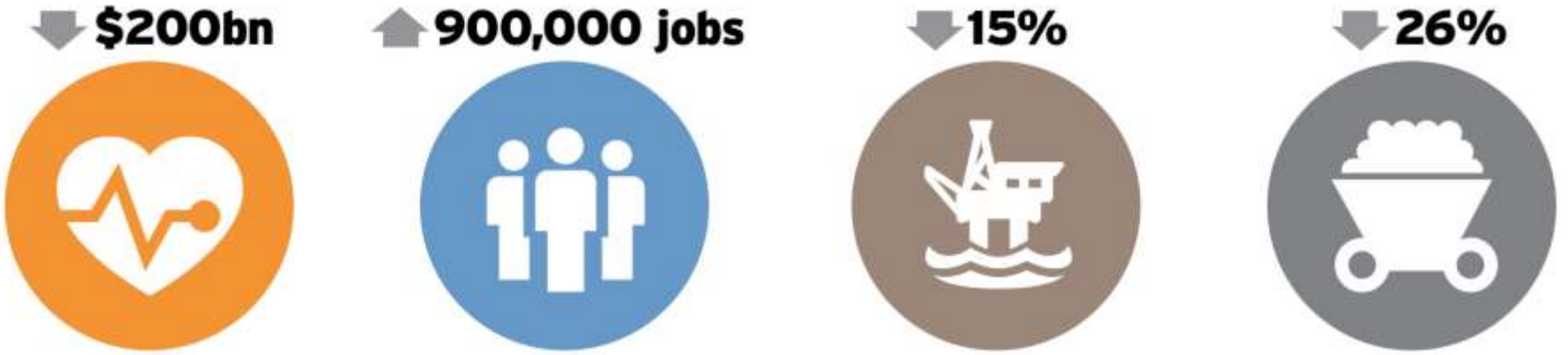


Doubling the share of renewables by 2030 would put the world on a pathway to limiting global warming to 1.5-2.0 degrees

Renewable energy reduction potential on par with efficiency potential

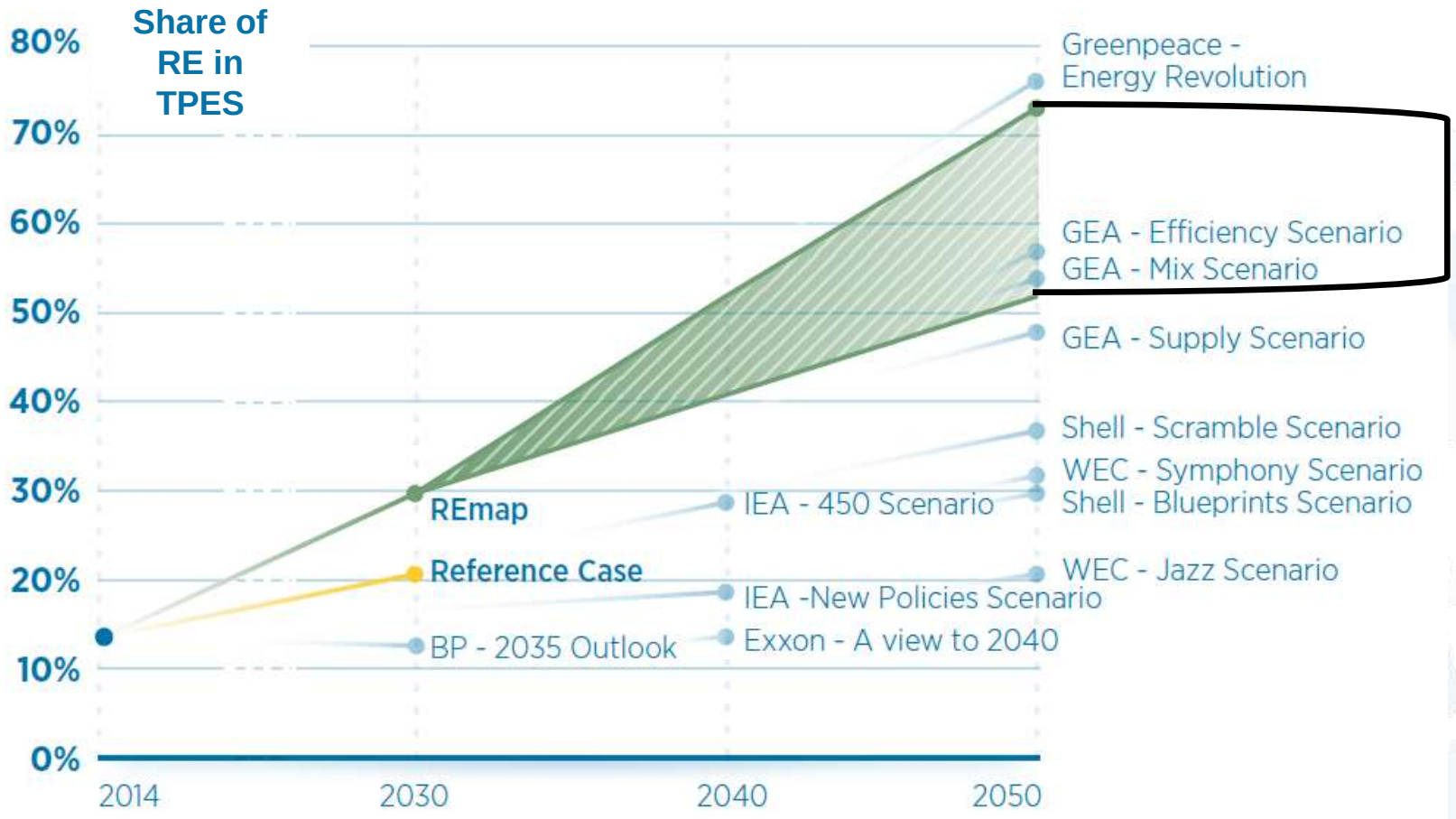
Source: IRENA (2016)

Benefits for Health, Environment and the Economy



About 1%/yr RE share growth needed 2015-2050

#REmap



RE share development to 2050 has a lot of opportunity for technology deployment in such a timeframe

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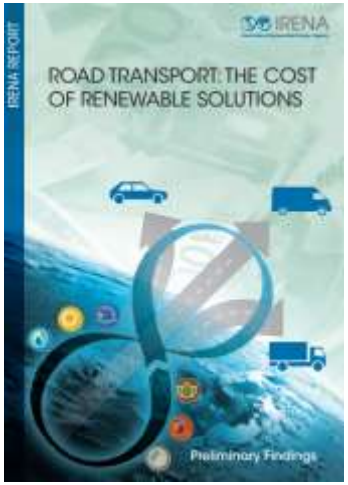
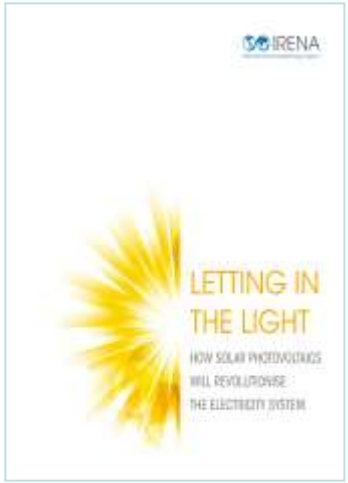
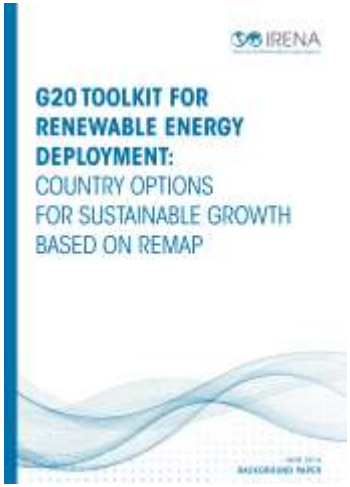
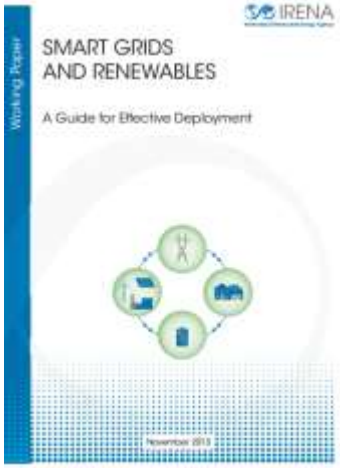
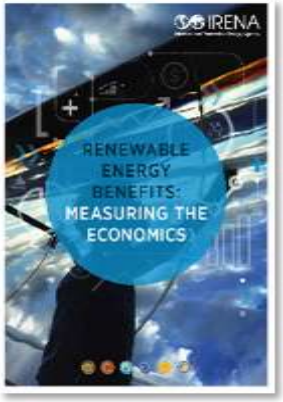
International Renewable Energy Agency











THANK YOU!

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