Alternative Financing for Municipal Embedded Generation (AFMEG) in South Africa

AN INTRODUCTION TO CLIMATE CHANGE, NATIONALLY DETERMINED CONTRIBUTIONS (NDCs) AND THE JUST TRANSITION

29th June 2021

Time: 14:00 to 16:00

SOUTH AFRICA UKPACT

ICLEI Local Governments for Sustainability AFRICA

ABBEL

3E

Programme outline

Alternative Financing for Municipal Embedded Generation (AFMEG) Project

AGENDA

An introduction to Climate Change, Nationally Determined Contributions (NDCs), and the Just Transition

Date: Tuesday, 29th June 2021 **Time: 14:00 to 16:00**

	TIME	ITEM	SPEAKER(s)
Training overview			
1.	14:00-14:15	Opening and Welcome	Mr. Kweku Koranteng, Professional Officer: Climate Change, Energy & Resilience, ICLEI Africa
2.	14:15 – 14:20	Brief Overview of AFMEG Training objectives	Ms. Nachi Majoe, Senior Professional Officer: Climate Change, Energy & Resilience
Climate Change and Nationally Determined Contributions (NDCs)			
3.	14:20 – 14:40	Introduction to climate change and energy in South Africa	Mr. Kweku Koranteng, Professional Officer: Climate Change, Energy & Resilience, ICLEI Africa
4.	14:40 - 14:50	Learning activity I	All
5.	14:50 – 15:00	Q & A/(Recount local evidence of climate change)	All
6.	15:00 – 15:15	Introduction to Nationally Determined contributions (NDCs)	Mr. Kweku Koranteng, Professional Officer: Climate Change, Energy & Resilience, ICLEI Africa
7.	15:15 – 15:25	Learning activity II	All
8.	15:25 – 15:30	Q & A	All
Just Transition			
9.	15:30 – 15:45	Introduction to the Concept of Just Transition	Dr. Azizat Gbadegesin, Professional Officer: Climate Change, Energy & Resilience, ICLEI Africa
10.	15:45 – 16:00	Closure / Training evaluation and Closure/Q & A (Schedule presentation)	All

ABOUT ICLEI

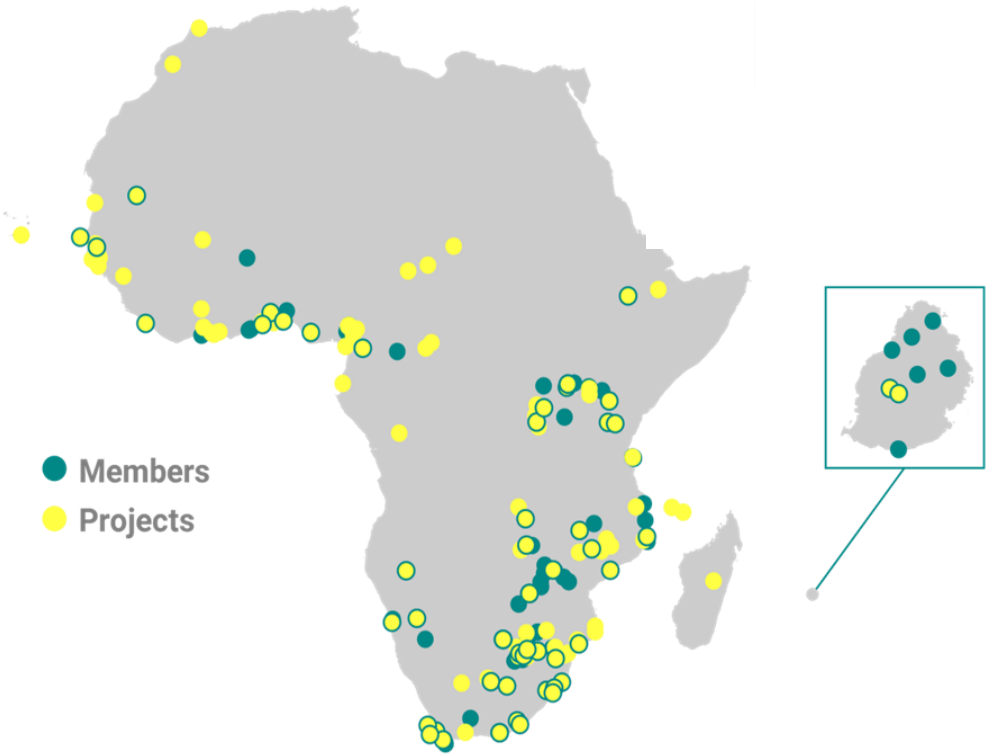
ICLEI – Local Governments for Sustainability is a global network of more than 1,750 local and regional governments committed to sustainable urban development. Active in 100+ countries, we influence sustainability policy and drive local action for low emission, nature-based, equitable, resilient and circular development. Our Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

1750+ local and regional governments

100+ countries

300+ experts in 22 offices worldwide

Who we are: ICLEI Africa



Founded in 1990, with the idea **that a single municipality has a significant impact** and that cumulative local actions can achieve tangible improvements in global sustainability.

What we do

ICLEI
Local Governments for Sustainability
AFRICA

We connect leaders

We accelerate action

We provide gateways to solutions

Project overview

Alternative Financing for Municipal Embedded Generation (AFMEG)

Background

- Municipalities are looking to develop embedded energy (solar and wind power technology) generation projects.
- Recent policy and regulatory changes now allow certain municipalities to install these projects, however, accessing finance for these initiatives remains a challenge.
- The Development Bank of Southern Africa (DBSA) has set up a R4bn Embedded Generation Investment Programme (EGIP) to stimulate growth of embedded generation initiatives in the country.
- Small and intermediary municipalities struggle to access the EGIP due to lack of capacity and resources to meet the application requirements.

Objectives

- To address the resource and capacity gap of intermediary cities in applying for project funding for embedded generation projects.
- To assist four municipalities with capacity building, policy analysis and recommendation, and pre-feasibility studies, helping them apply to the EGIP.
- To share learnings which will further help financiers, municipalities and national entities understand the requirements for intermediary cities to apply for embedded generation funding.

Long Term

- Guide and build the capacity of LGs to access finance for embedded generation projects

- Develop municipal by-laws, pre feasibility studies and a financial model for municipal embedded generation.

- Create inter-governmental coordination and identify needs for financing municipal embedded generation projects.

Output list

1. An introduction to climate change, NDCs and the Just Transition

2. A Just Transition approach to renewable energy planning in the South African context

3. Gender considerations for renewable energy and climate change

4. Embedding renewable energy generation and policy development (3- day workshop)

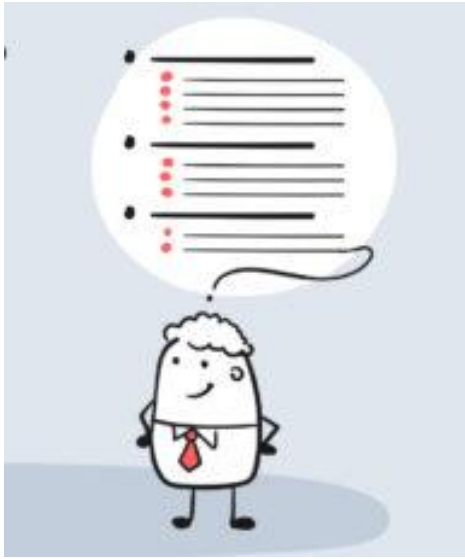
5. Introduction to climate finance and an exploration of finance models for the renewable energy embedded generation projects

6. Key considerations to undertake a pre-feasibility study for a renewable energy embedded generation project

Climate change

Outline

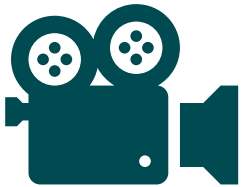
1. What is climate change?
2. What is the difference: Weather vs. Climate; Mitigation vs. Adaptation?
3. What are the science and evidence of climate in South Africa?
4. What are the mitigation and adaptation strategies?
5. What are the drivers of the transition to low carbon energy sources?
6. What is South Africa’s pathway to low carbon economy?
7. What is NDCs in the context of South Africa?
8. What is a Just Transition ?



What is Climate Change

Climate change explained

- https://africa.iclei.org/video-series-adapting-to-climate-change-and-enhancing-resilience/

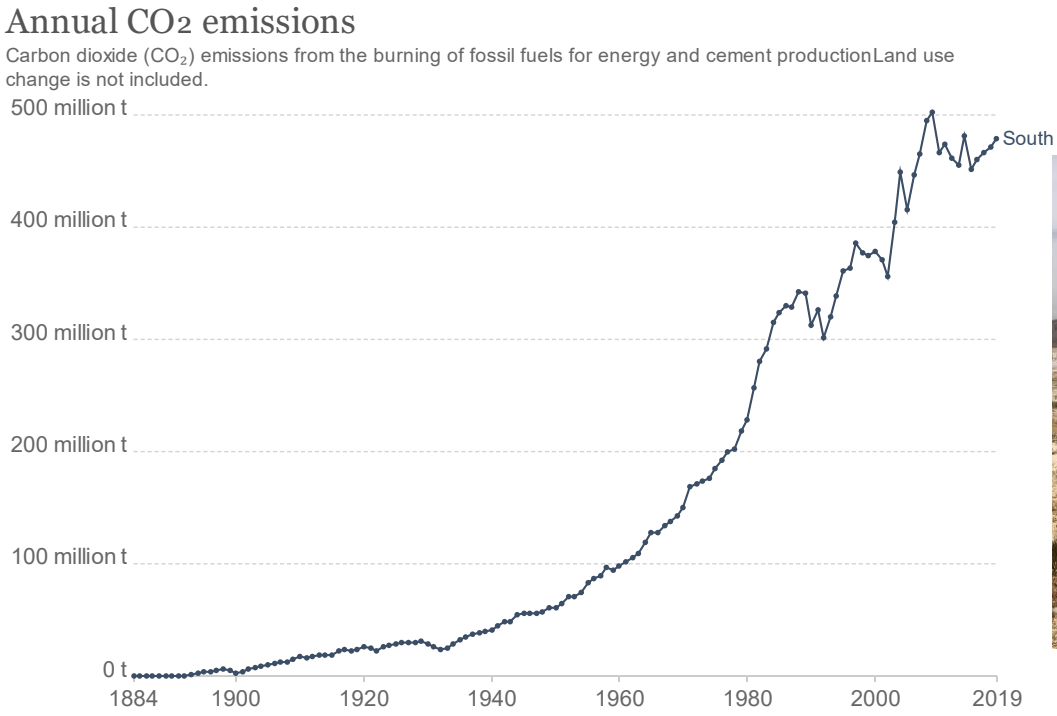


Weather vs. Climate

Weather: The state of the atmosphere at a particular place and time. E.g. “daily temperatures” or the “amount of rainfall in a given day”

Climate: The prevailing weather conditions or trends in a specific geographical region in general or over a long period of time. E.g. “average monthly rainfall patterns” or “seasons and average maximum temperatures”

Science and Evidence of Climate Change in South Africa



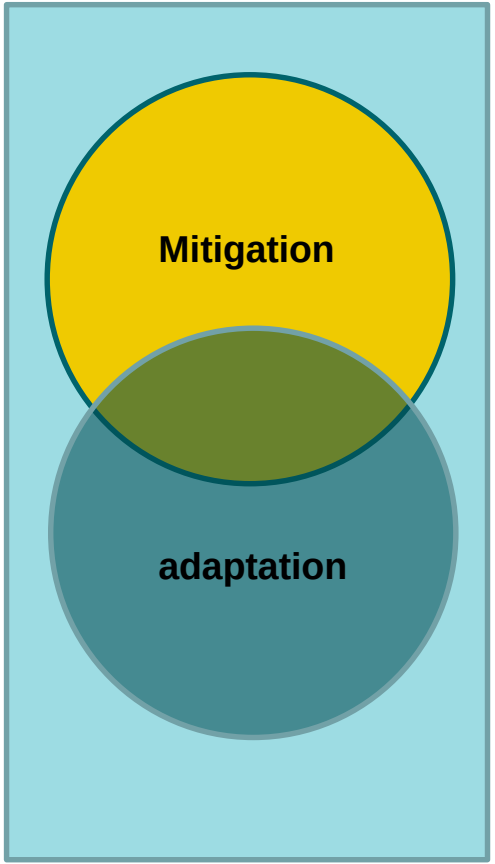
Theewaterskloof dam. Credit: Rob McSweeney

Dried up dam basin:

Mitigation vs. Adaptation

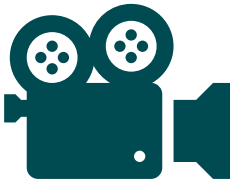
Mitigation: Reducing the amount of GHG emissions that are being released into the atmosphere to stabilise and ultimately reduce GHG emissions.

Adaptation: Responding to the impacts of climate change that are already anticipated to occur due to the elevated GHG emissions in the atmosphere.



Climate Change Adaptation

http://www.letsrespondtoolkit.org/1-what-is-climate-change



Climate Change Adaptation Needs by Sector

Sector	Adaptation strategies
Water	Expand water storage and desalination Improve watershed and reservoir management Increase water-use and irrigation efficiency and water re-use Urban and rural flood management
Agriculture	Adjust planting dates and crop locations Develop crop varieties adapted to drought, higher temperatures Improved land management to deal with floods/droughts Strengthen indigenous/traditional knowledge and practice
Infrastructure	Relocate vulnerable communities Build and strengthen seawalls and other barriers Create and restore wetlands for flood control Dune reinforcement
Human health	Health plans for extreme heat Increase tracking, early-warning systems for heat-related diseases Address threats to safe drinking water supplies Extend basic public health services

Source: IPCC, 2007; IPCC, 2014b.

cont: Climate Change Adaptation Needs by Sector

Sector	Adaptation strategies
Transport	Relocation or adapt transport infrastructure New design standards to cope with climate change
Energy	Strengthen distribution infrastructure Address increased demand for cooling Increase efficiency, increase use of renewables
Ecosystems	Reduce other ecosystem stresses and human use pressures Improve scientific understanding, enhanced monitoring Reduce deforestation, increase reforestation Increase mangrove, coral reef, and seagrass protection

Source: IPCC, 2007; IPCC, 2014b.

International Climate Change Negotiations

Year, Location	Outcome
1992, Rio de Janeiro	UN Framework Convention on Climate Change (UNFCCC). Countries agree to reduce emissions with "common but differentiated responsibilities."
1995, Berlin	The first annual Conference of the Parties to the framework, known as a COP. U.S. agrees to exempt developing countries from binding obligations.
1997, Kyoto	At the third Conference of the Parties (COP-3) the Kyoto Protocol is approved, mandating developed countries to cut greenhouse gas emissions relative to baseline emissions by 2008-2012 period.
2001, Bonn	(COP-6) reaches agreement on terms for compliance and financing. Bush administration rejects the Kyoto Protocol; U.S.is only an observer at the talks.
2009, Copenhagen	COP-15 fails to produce a binding post-Kyoto agreement, but declares the importance of limiting warming to under 2°C. Developed countries pledge $100 billion in climate aid to developing countries.
2011, Durban	(COP-17) participating countries agreed to adopt a universal legal agreement on climate change as soon as possible, and no later than 2015, to take effect by 2020.
2015, Paris	COP-21 195 nations sign the Paris Agreement, providing for worldwide voluntary actions (INDC's) by individual countries.

Climate Change Mitigation

Global policy action

- The Paris **Agreement** is a legally binding **international treaty** on **climate change**.
- It was adopted by 196 parties at COP 21 in Paris, on 12 December, 2015 and entered into force on 4 November 2016.
- Its goal is to limit **global warming** to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels

Local-context

As a number of economic activities contribute to GHGs emissions, what are the actions taken to curb further GHG emissions in South Africa?

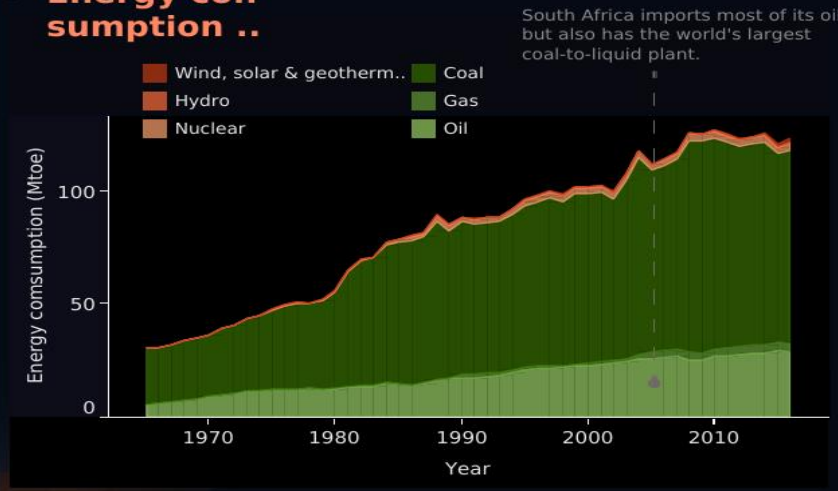
The Emission Profile of South Africa

South Africa is the world's 14th largest emitter of greenhouse gases.

The country's energy system depends heavily on coal, though recent policy turns have signalled a possible a major shift towards renewables and gas.

South Africa has ratified the Paris Agreement and has pledged to peak emissions between 2020 and 2025, before reducing them in the 2030s.

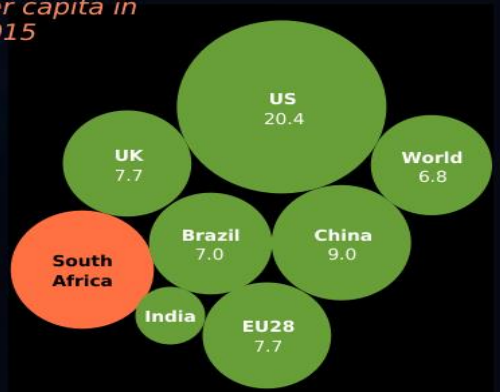
Energy consumption ..



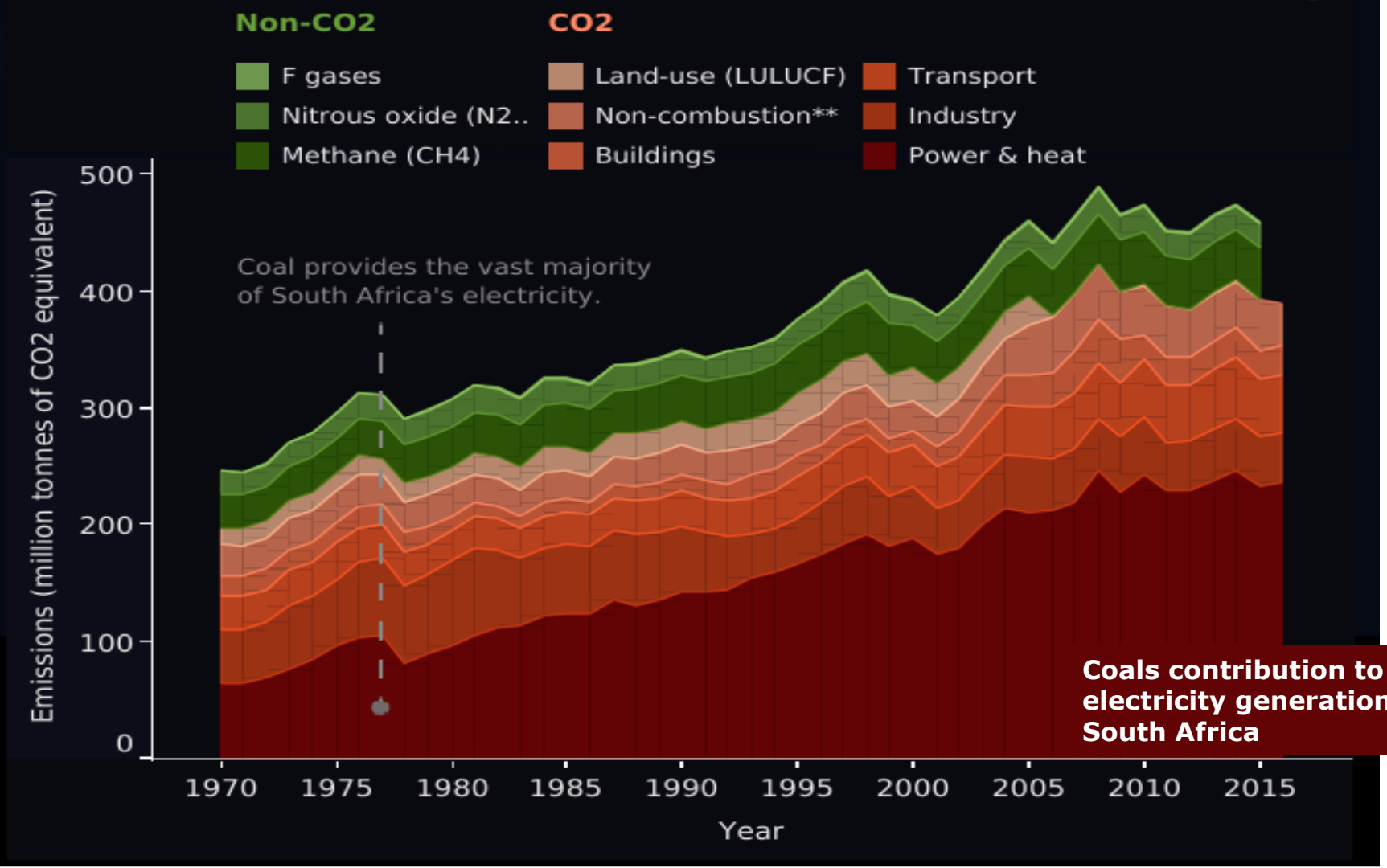
SOUTH AFRICA

Emissions

per capita in 2015

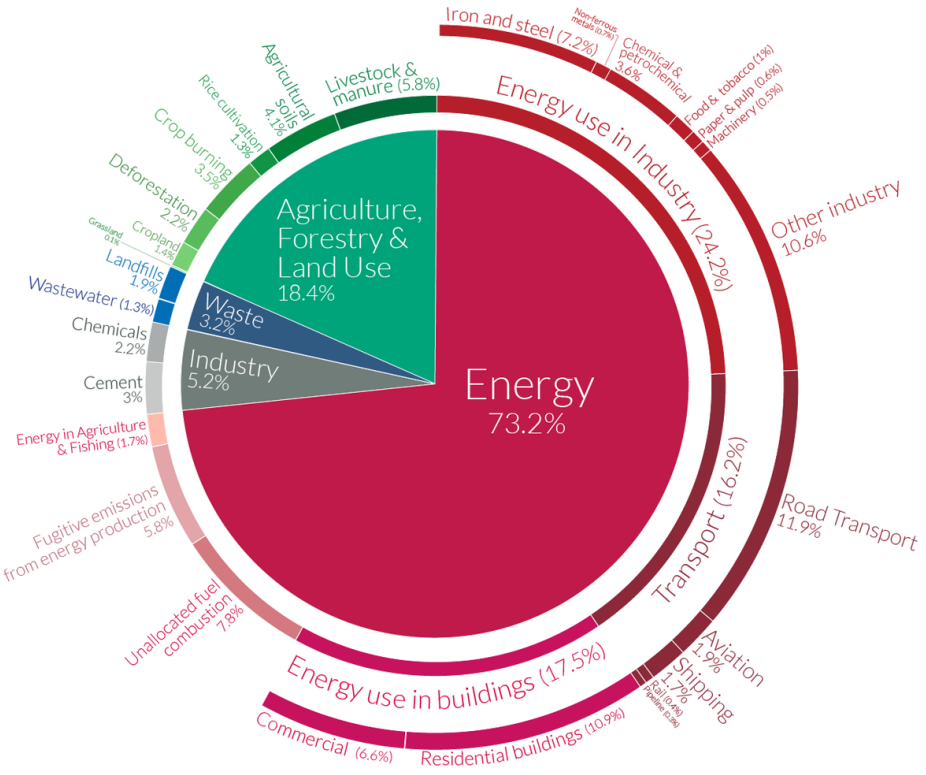


South Africa to peak emissions by 2025 and plateau



Coals contribution to electricity generation in South Africa

Why the focus on Energy?



The drivers of transition to low carbon energy sources

Coal mines

Renewables

South Africa’s pathway to low carbon economy

Renewable Energy outlook

- Renewable power has risen rapidly in South Africa since **2013 and provided 3.4% of electricity in 2017.**
- Solar PV and wind costs have fallen 80% and 60%, respectively, over the years.
- Investment in 2018 stood at **$2.6bn a 90-fold increase compared** to the same period in 2017, in part due to a **$1.4bn wi**nd project reaching financial close in August.
- In 2012, the **Renewable Energy Independent Power Producer Procurement Programme (REIPPPP**) was introduced to replace feed-in-tariff scheme. The REIPPP uses a bidding system to fund renewable capacity procurement, guaranteeing projects access to the grid.
- The 2010 IRP proposed an increased target of renewables to **18.8GW**, 21% of total capacity but a draft IRP 2018 increased this capacity to 27% of total capacity by 2030.

Learning Activity I

Questions: Weather and Climate

1. Which of the following statements best describes the weather?
    a. A global temperature increase by 4 degrees by 2100
    b. There is more cloud cover today than yesterday
    c. It has been a particularly hot season this year
    d. Total monthly wet days
2. Which of the following statements describes the climate?
    a) There is currently a thunderstorm
    b) There is a 30% chance of rain today
    c) Average annual rainy days in the rainy season
    d) Today it is raining
3. Which of the following is a major contributor to Green House Gas (GHG) emissions?
    a. Oxygen
    b. Carbon
    c. Chlorine
    d. Carbon Dioxide

Learning Activity I

Questions on Mitigation and Adaptation

1. Which of the following is a mitigation strategy?
    a) Reduce, re-use and recycle
    b) Flood monitoring
    c) Water conservation activities

2. Which of the following is an adaptation strategy?
    a) Bio-gas from agricultural waste
    b) Contingency plans
    c) Net zero carbon buildings

3. Which of the options describes both mitigation and adaptation?
    a) Eating less of meat
    b) Urban greening & urban parks
    c) Building water reservoirs
    d) Switching from coal to solar Eating less meat

An introduction to Nationally Determined Contributions

Nationally Determined Contributions

- Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of these long-term goals.
- NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change.
- The **Paris Agreement** requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve.
- Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.

South Africa's NDCs

South Africa submitted its first NDC with the UNFCCC in October 2015, committing to keeping national greenhouse gas emissions within a range from 389 Mt CO2-eq for 2025 and 2050

The NDCs for South Africa addresses adaptation, mitigation, finance and investment requirements

Climate and Energy

- Prior to the pandemic, the South African Cabinet approved Integrated Resource Plan (IRP2019) in October 2019. The final plan marks a major shift in **energy** policy away from coal towards renewables, which is noteworthy, being for a coal-dominated country.

- Implementing the IRP2019 will enable South Africa to achieve its 2030 NDC target.

Learning Activity II

Reflection:

What mitigation strategies can be adopted by Municipalities to contribute to the NDCs?

An introduction to the Just Transition

The Just Transition

The **Just Transition** is a framework developed to encompass social interventions needed to secure the future and livelihood of workers and their communities, when economies are shifting to low-carbon economies to combat climate change and protect biodiversity.

- South Africa was the only country to mention the importance of a just transition in its initial Nationally Determined Contributions (NDC) submitted under the Paris Agreement in 2015.

- Climate concerns
- Protection of biodiversity

- Social interventions
- Workers' rights
- Community benefits

Just Transition

Coal fueled 88% of South Africa's electricity generation in 2019 and was 73% of its energy supply in 2018.

FROM: A coal-dependent economy
THROUGH: a Just Transition
TO: a low carbon, climate resilient economy and society

- Its aim is to empower communities to participate in debates about the Just Transition from fossil fuels. It requires all stakeholders - workers, employers, governments, communities, businesses and civil society to be involved to make it work.

Just Transition principles

- The **principle** of **just transition** is that a healthy economy and a clean environment can and should co-exist.

- The process for achieving this vision should be a fair one – fair to workers and to community residents without a loss in socioeconomic or environmental living conditions in the community.
  Any losses should be fairly compensated.

Just Transition and international agreements

The **Paris Agreement** acknowledges "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" and highlights the importance of workers in responding to climate change.

Similarly, the Just Transition links many of the 17 **Sustainable Development Goals -** explicitly drawing together four of them – SDG 7, SDG 8, SDG 10 and SDG 13.

SDG goals and the Just Transition concept

- GOAL 7: Affordable and Clean **Energy**
- GOAL 8: Decent **Work** and Economic Growth
- GOAL 10: Reduced **Inequality**
- GOAL 13: **Climate** Action

The transition from coal to renewable energy

	COAL	RENEWABLE ENERGY
Workforce	200,000	31,200
Value chain	Coal prospecting – mining – preparation - transportation	Manufacturing. Studies, design and installation. Project development, maintenance
Resource availability	Coal. Limited to local governments with coal deposits.	Solar, wind, hydro, biomass, etc.
Site development, Infrastructure, and equipment	Mining and transportation infrastructure	Solar panels, inverters. Wind turbines, towers. Pumps, turbines, generators, reservoirs

Positive impacts of a low-carbon economy

	CARBON-BASED	LOW CARBON
Health	Working conditions with exposure to fine-dust particles	Reduced illnesses
Environment	Release of GHGs, heavy metals and air & land pollution	Reduced pollution in electricity generation and use of energy
Employment	High employment, but limited mobility to coal-related activities	Opportunities to upgrade to new skills Increased mobility

Areas to address

- Transition costs – financers and beneficiaries, how much is incurred, repayment plans?
- Energy Mix - Role of coal, nuclear, gas in the transition
- Alternative government income streams – Local, regional and national government funded by fossil-fuel revenues.
- Labour market – job losses and new jobs?
- Vulnerable workers and community members – elderly, poor, retiring workforce.
- Readiness of the energy industry – laws, skills and manpower, project financing.

Thank You

Get in touch:

Nachi Majoe: nachi.majoe@iclei.org

Ryan Roberts: ryan.roberts@iclei.org

@ICLEIAfrica / @ICLEICBC

+27 21 202 0381

www.africa.iclei.org

Training Evaluation

Turn on your phone camera,
point it to the link
and access the link

https://bit.ly/35Yf4Xy

See the chat for the link to access the evaluation

Capacity Needs Assessment Survey

- Turn on your phone camera, point it to the link and access the link

See the chat for the link to access the assessment survey https://www.surveymonkey.com/r/F2ZL2QY