



**Mthobisi Wellington Sibanda
Liz McDaid
Gosiame Choabi
Ndivile Mokoena
Neville van Rooy**



SOUTHERN AFRICAN FAITH COMMUNITIES' ENVIRONMENT INSTITUTE



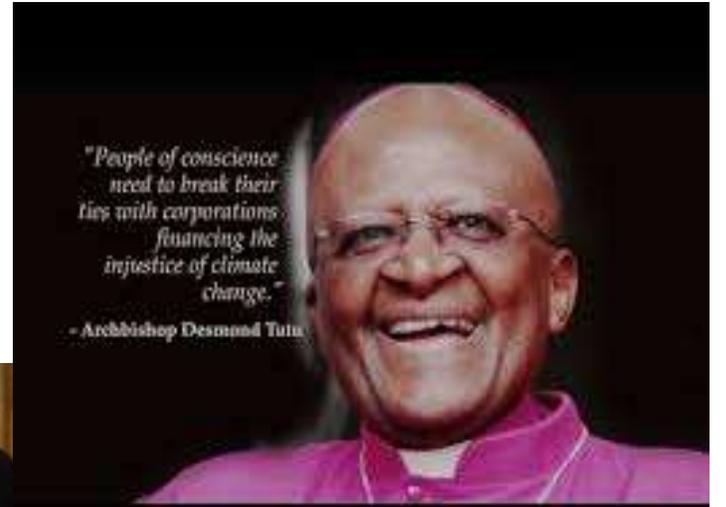


SOUTHERN AFRICAN FAITH COMMUNITIES' ENVIRONMENT INSTITUTE

We are an institute of people of many faiths, united in our diversity through our common commitment to support the faith communities in fulfilling their environmental & socio-economic responsibility.

SAFCEI upholds the core principles of the Earth Charter, including:

- Respect and care for the community of life
- Ecological integrity
- Social and economic justice
- Democracy, non-violence and peace



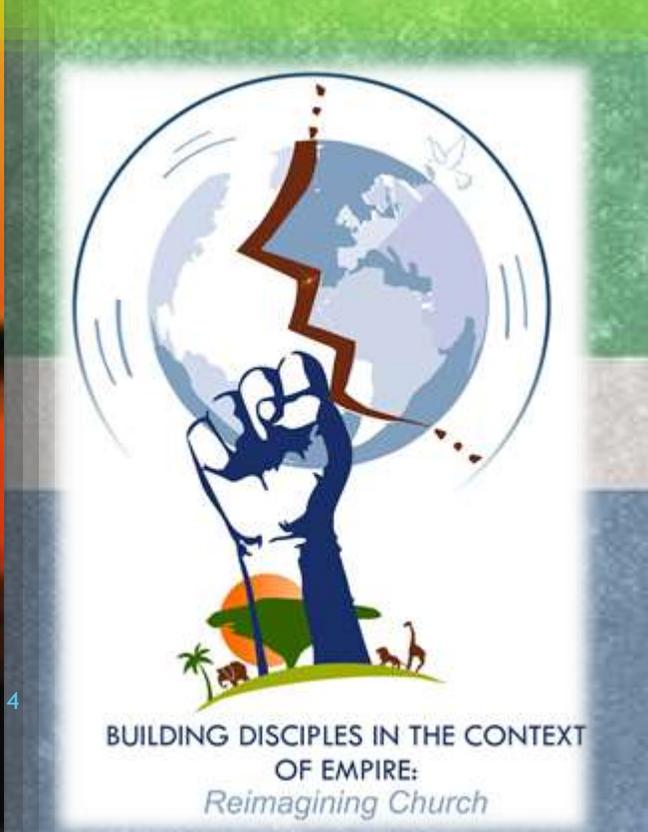


**Caring
for
God's
world**



FLEAT
National Parliament, Cape Town, 23 October 2018

Connecting our faith with the Environment
Mthobisi Wellington Sibanda
Student Minister, United Congregational Church of Southern Africa
(UCCSA) World Council of Churches Ecumenical Education and Formation
Commissioner





The call to transformation

The earth is groaning and this is indicated by the unprecedented number of tsunamis, earthquakes and floods. This, I would argue, is a result of human failure in our stewardship of creation.

It is our vocation to show gratitude to God by caring for the environment in whatever small way we can. It is my hope that we remember this aspect of our discipleship.

Our world is faced with extremely difficult choices, trying to find the right balance between exploiting our environment to sustain our livelihood and protecting our environment for future generations.

Climate Change is one of the largest a threat to human kind looking at the current trend from droughts in Somalia, rising of sea level in Kiribati, earthquakes in New Zealand Haiti and Japan all this patterns are a cause for concern and it is a clear example of where the young generations needs are comprised by the lifestyles of the older and current generations.

The great sin against the environment

The next issue I would like to bring to our attention is the question of environmental justice. Creation narratives speak to a pact between God and human beings, which involves the latter being given the responsibility to be stewards of creation.

Somewhere along the way in the development of Christian spirituality we lost our relationship and responsibility towards creation. We saw creation as an object of exploitation rather than as a source of our sustenance which requires not only our stewardship but our reverence as well.

In our search for justice we have to seek ways of repenting of our silence and collusion in the degradation of God's creation.

The results of a world that has been systematically weakened by the greed and profiteering of human beings are all evident in our communities.

Sadly the effects of such environmental abuse which include deforestation, irregular rainfalls and floods are mostly felt by the poor. Our repentance (*metanoia*) for the sin we have and continue to commit against creation has to be embodied in our liturgical and worship resources

Relationship at its best in the creation narrative

- At the core of the creation narrative is relationship - relationship between God and the creation, between nature and humanity and between one human being and another.
- There is interconnectivity and interdependence at all levels, and no aspect of God's creation is portrayed as inferior, on the one hand, or indispensable on the other.



Climate Change: A Call for Personal Changes

The reality of climate change calls for a re-evaluation of our actions and a redirection of our energies towards the reduction or possible reversal of the looming environmental crisis. Religious leaders are challenged to look into their traditions for any inspiration that could guide us towards averting this global disaster. This new demand on old traditions forces us to look creatively at the world's religious heritage and reinterpret or reapply sacred texts and principles to our present problem. It is surprising, however, that the texts of the Islamic religious tradition speak directly on many issues that are pertinent to our problem. Hence the task for the Muslim expositor here is not so much a reinterpretation of the traditions, but mainly a reapplication of old texts to new problems.

The Quran calls on us to recognise our own contribution to the crisis: God, To begin with, the Quran calls on us to recognise our own contribution to the crisis:

Corruption doth appear on land and sea because of (the evil) which men's hands have done, that He may make them taste a part of that which they have done, in order that they may return. (Quran 30:41)

According to the verse cited, God is giving us a taste of our own medicine so that we may return from the wrong directions we have taken in life. If we are to reverse the deterioration of our environment then we have to make some hard choices and change our practices. In other words, ecological change calls for personal change.



"We are the first generation to feel the impact of climate change and the last generation that can do something about it," Obama said.

Quakers live in and are part of the environment. Since the early days they followed the conventional practice of separating their faith from the world around them. Later, with the growth of the environmental movement, a second option emerged, that of spiritualizing nature.

To be worthy stewards we need to be open to the wonder and mystery of creation, transformed by its beauty and called to action by its suffering. God has given us the responsibility to care for the earth, its natural resources and our environment.

We have much to learn from Indigenous people who have demonstrated a greater level of respect for our Mother Earth, recognizing that pollution from the use of fossil fuels and other mineral extractions does not bring honour and is not beneficial to nature and the long-term survival of the inhabitants of the earth.

If evangelism is to bring good news today, it needs to entail the *kenosis* that puts the long-term sustainability of the earth ahead of our own short-term comfort and convenience.

As TTL states: "Humanity cannot be saved alone while the rest of the created world perishes. Eco-justice cannot be separated from salvation, and salvation cannot come without a new humility that respects the needs of all life on earth." (§23)



FAITH LEADERS ENVIRONMENTAL ADVOCACY TRAINING - FLEAT



FLEAT members



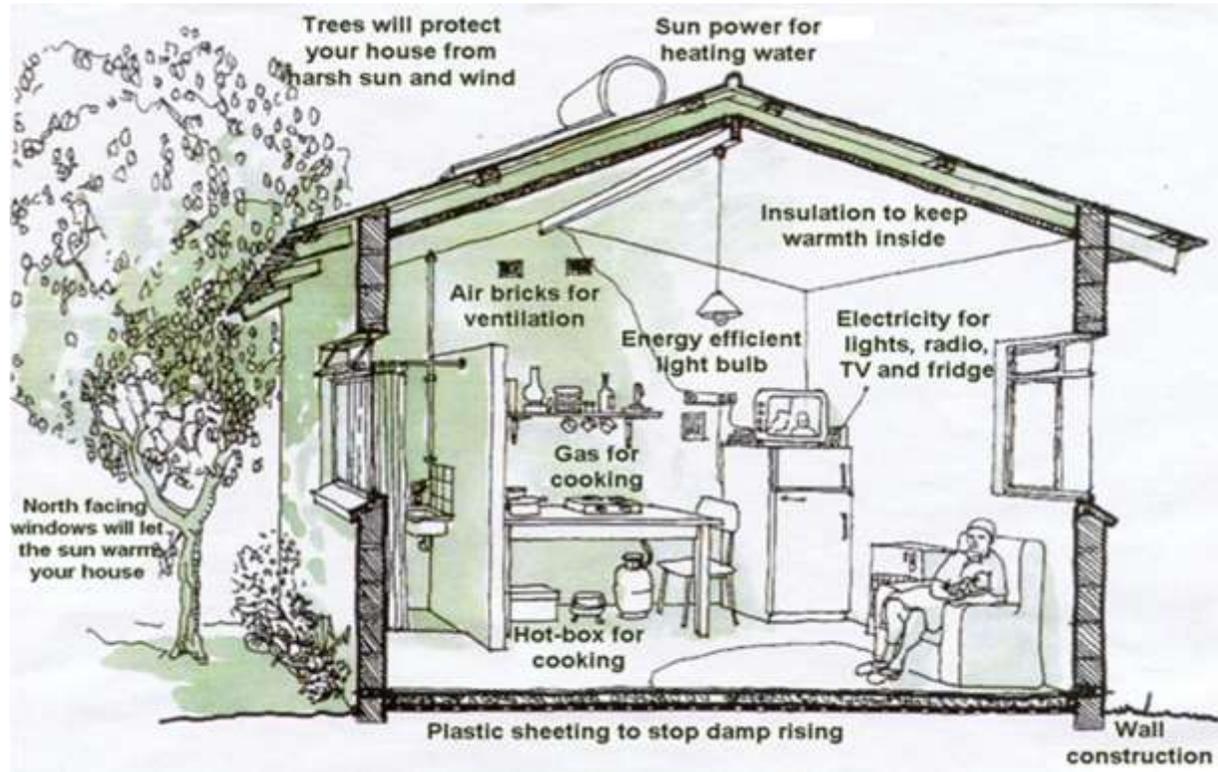
FLEAT EVENTS



Current Challenges in making Energy choices – for the public good

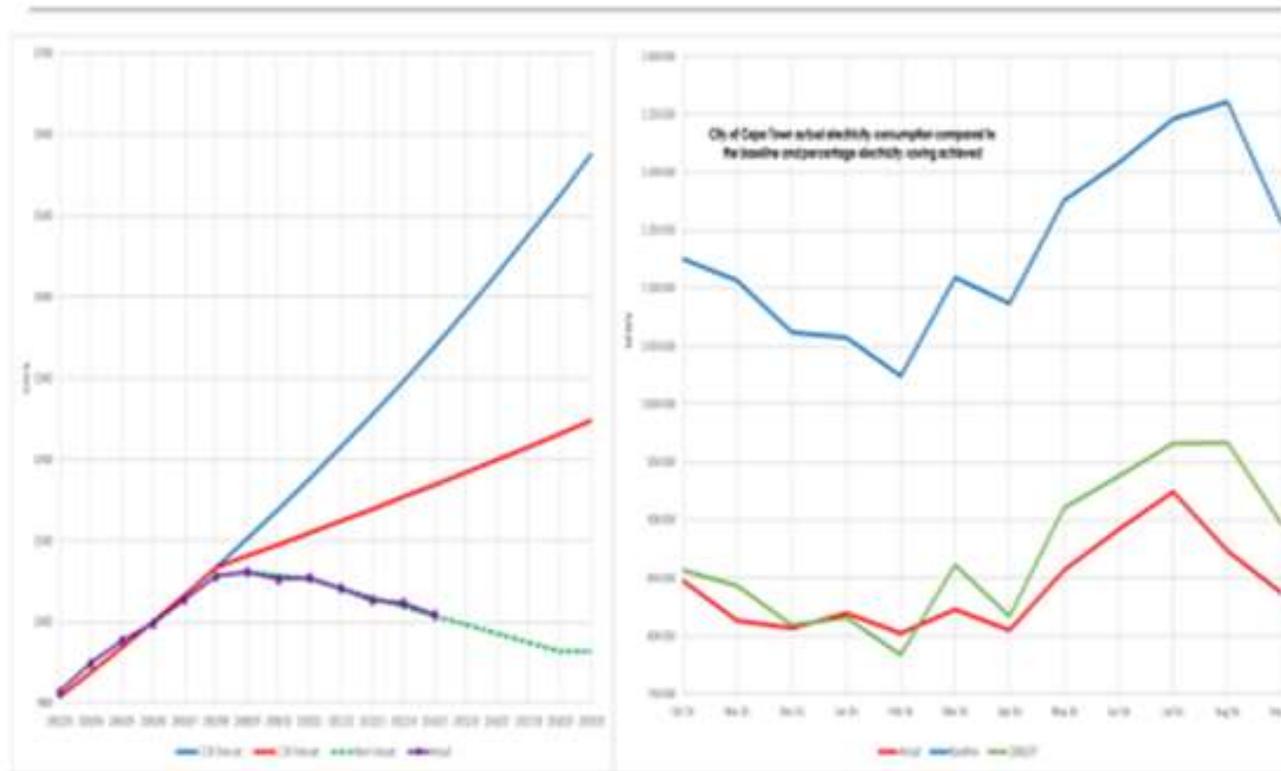
- Sustainability – no waste, pollution
- Least damage – health, environmental harm
- Climate change response – low carbon
- Social benefits – local control, ownership, jobs
- Affordable – costs of finance, maintenance, budget impacts
- Democracy – transparency and consultation

Innovation and Adaptation

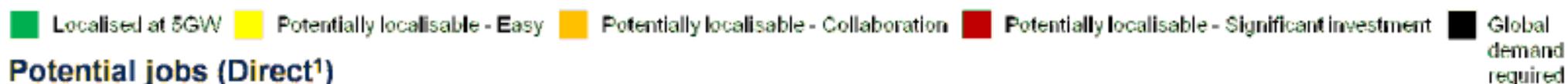


Electricity Demand

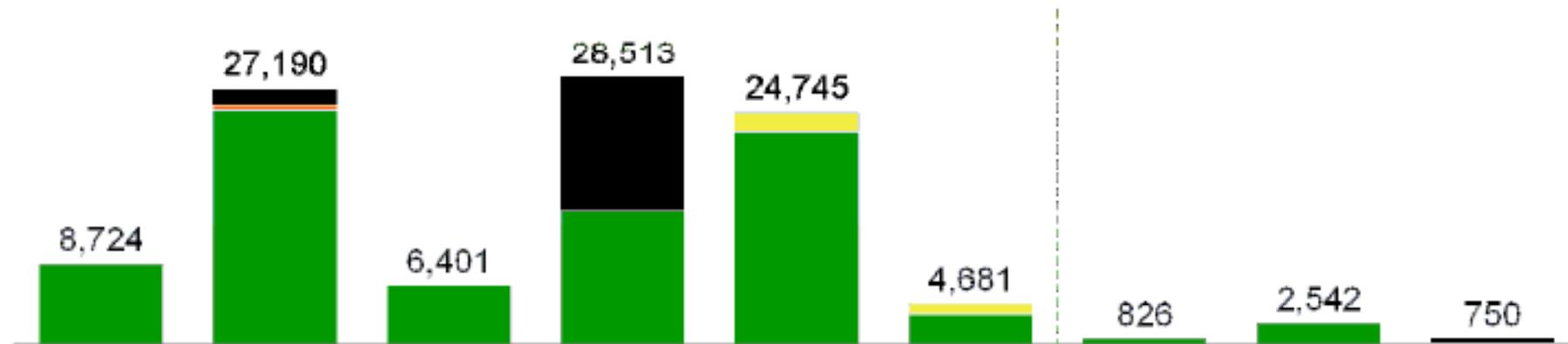
Electricity demand Cape Town 2006/7 – 2015/16



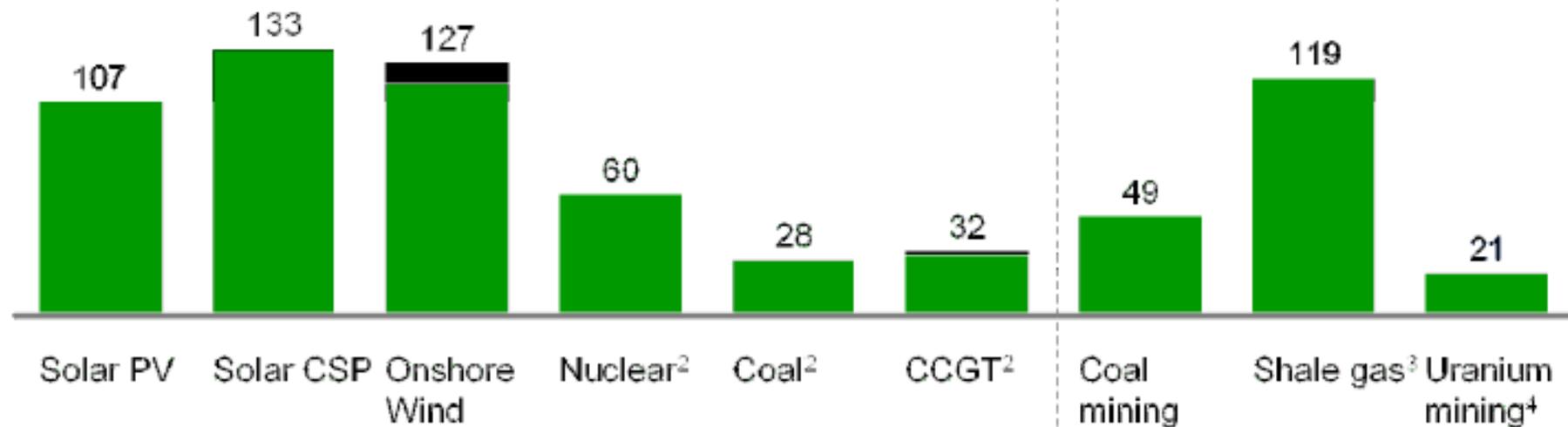
Direct jobs: total potential per energy technology



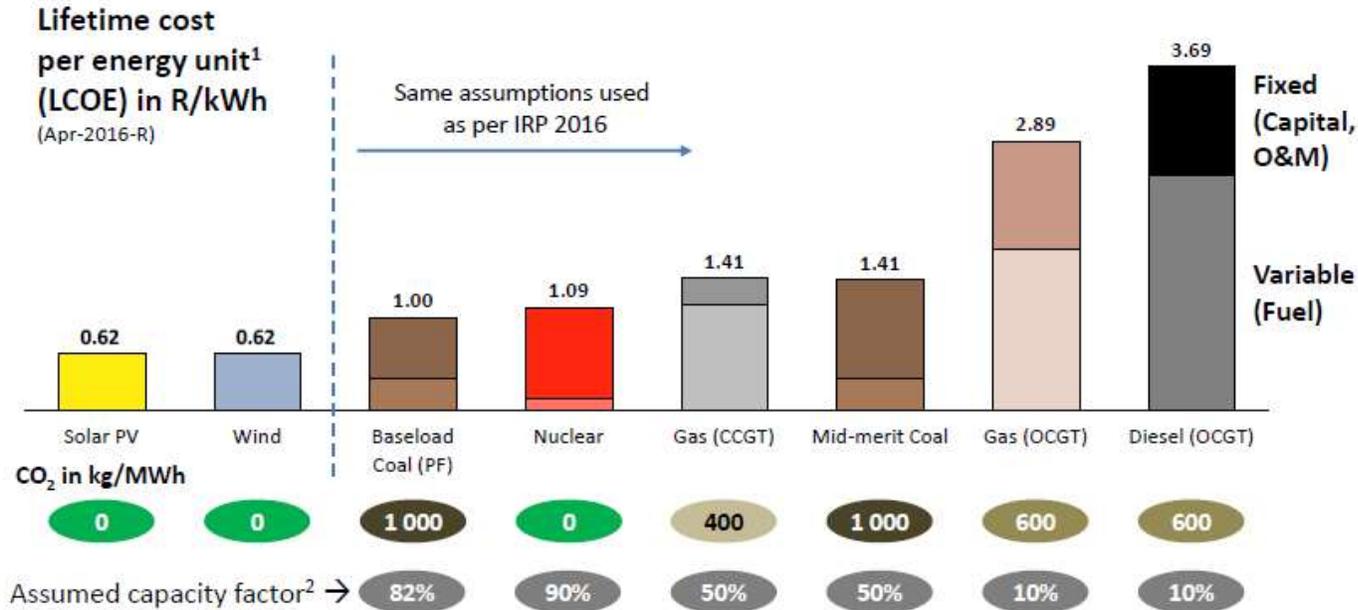
Capex
Job years per GW installed



Opex
Annual jobs per TWh



Inputs as per IRP 2016: Key resulting LCOE from cost assumptions for new supply technologies



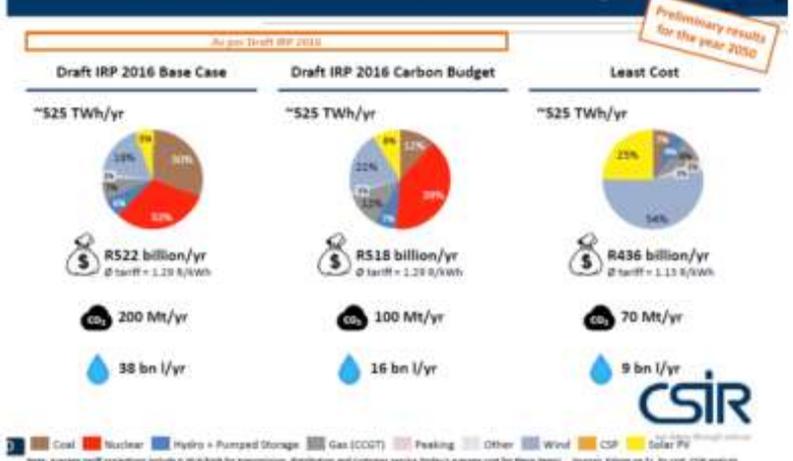
¹ Lifetime cost per energy unit is only presented for brevity. The model inherently includes the specific cost structures of each technology i.e. capex, Fixed O&M, variable O&M, fuel costs etc.
² Changing full-load hours for new-build options drastically changes the fixed cost components per kWh (lower full-load hours → higher capital costs and fixed O&M costs per kWh);
 Assumptions: Average efficiency for CCGT = 55%, OCGT = 35%; nuclear = 33%; IRP costs from Jan-2012 escalated to May-2016 with CPI; assumed EPC CAPEX inflated by 10% to convert EPC/LCOE into tariff; Sources: IRP 2013 Update; DoE IPP Office; StatsSA for CPI; Eskom financial reports for coal/diesel fuel cost; EE Publishers for Medupi/Kusile; Rosatom for nuclear capex; CSIR analysis

38

CSIR energy scenarios for South Africa 2017

Energy planning

Least Cost without renewables limits is R82-86 billion/yr cheaper by 2050 than IRP 2016 Base Case and IRP 2016 Carbon Budget case



Judgement given on 26th April

Judgement handed down on day before freedom day and also on Chernobyl day.

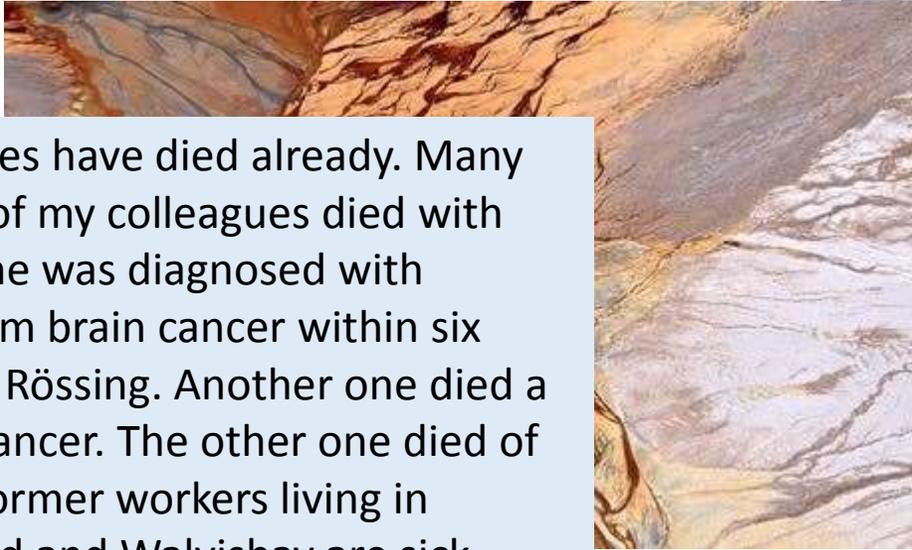
- IGA unlawful and set aside
- Determinations unlawful and set aside
- Government to pay costs of civil society legal fees

Russian framework agreement.. 2014
“Indemnify the Russians from any liability arising from nuclear accidents during the reactors’ life. The agreement says South Africa is “solely responsible for any damage both within and outside the territory of the Republic of South Africa” (M&G 2015);

What does it mean?

- If we need nuclear, then restart the process
- If proper consultation and meaningful information, will modelling choose nuclear?

On the ground



‘Most of my colleagues have died already. Many are sick. I know one of my colleagues died with one lung. Another one was diagnosed with silicosis and died from brain cancer within six months after leaving Rössing. Another one died a month ago, he had cancer. The other one died of heart attack. Many former workers living in Arandis, Swakopmund and Walvisbay are sick. Why is this happening?’

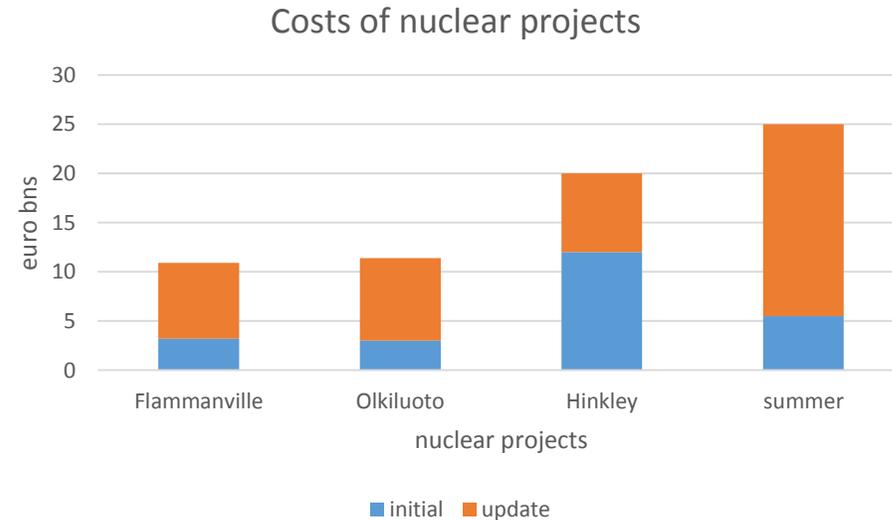
Money for rehabilitation dependent on new mine going ahead!

Pelindaba workers – 2004 - no resolution – people die before case is solved (15 out of 208)

Navajo Nation to get more than US\$ 1 billion in settlement to clean up abandoned uranium mines, radioactive waste – 2014 (35 yrs)

Nuclear option – Professor Steve Thomas 2018

- Criteria:
 - Electricity cost
 - Proveness in construction and operation
 - Licensability by highly experienced safety regulators
 - Availability of Finance
- Conclusion
 - Cost underestimated
 - (add min 50% for finance costs)
 - Over deadline
 - Policy changes (Korea)
 - Fraud and lack of capacity

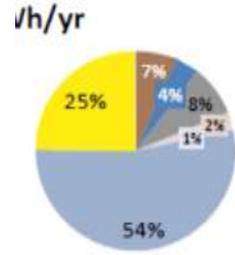


Planning for what you want!

Ask model to provide enough energy at cheapest cost

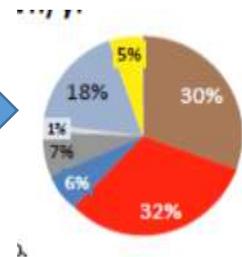


1. Criteria lowest Price of energy



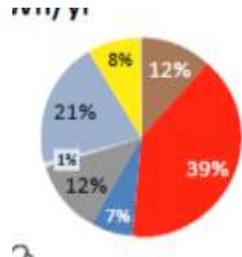
BUT

2. Criteria: Restrict amount of renewables



BUT

3. Criteria: Be climate friendly, restrict coal



IRP 2018

	Coal	Nuclear	Hydro	Storage (Pumped Storage)	PV	Wind	CSP	Gas / Diesel	Other (CoGen, Biomass, Landfill)	Embedded Generation
2018	39 126	1 860	2 196	2 912	1 474	1 980	300	3 830	499	Unknown
2019	2 155					244	300			200
2020	1 433				114	300				200
2021	1 433				300	818				200
2022	711				400					200
2023	500									200
2024	500									200
2025					670	200				200
2026					1 000	1 500		2 250		200
2027					1 000	1 600		1 200		200
2028					1 000	1 600		1 800		200
2029					1 000	1 600		2 850		200
2030			2 500		1 000	1 600				200
TOTAL INSTALLED	33 847	1 860	4 696	2 912	7 958	11 442	600	11 930	499	2 600
Installed Capacity Mix (%)	44.6	2.5	6.2	3.8	10.5	15.1	0.9	15.7	0.7	

Installed Capacity
 Committed / Already Contracted Capacity
 New Additional Capacity (IRP Update)
 Embedded Generation Capacity (Generation for own use allocation)

Some reflections

- Sustainability – no waste, pollution, water
- Least damage – health, environmental harm
- Climate change response – low carbon
- Social benefits – local control, ownership, jobs
- Affordable – costs of finance, maintenance, budget impacts
- Democracy – transparency and consultation

	Coal	Nuclear	Hydro	Storage (Pumped Storage)	Wind	WSP	CSP	Gas / Diesel	Other (CoGen, Biomass, Landfill)	Embedded Generation
2018	39 126	1 860	2 196	2 912	1 474	1 980	300	3 830	499	Unknown
2019	2 155						300			200
2020	1 433				114	300				200
2021	1 433				300	818				200
2022	711				400					200
2023	500									200
2024	500									200
2025					670	200				200
2026					1 000	1 500		2 250		200
2027					1 000	1 600		1 200		200
2028					1 000	1 600		1 800		200
2029					1 000	1 600		2 850		200
2030			2 500		1 000	1 600				200
TOTAL INSTALLED	33 847	1 860	4 696	2 912	7 958	11 442	600	11 930	499	2 600
Installed Capacity Mix (%)	44.6	2.5	6.2	3.8	10.5	15.1	0.9	15.7	0.7	

Installed Capacity
 Committed / Already Contracted Capacity
 New Additional Capacity (IRP Update)
 Embedded Generation Capacity (Generation for own use allocation)

What legacy are we leaving the grandchildren of Southern Africa?



Will Business as usual be in the public interest?



Recommendations

- What is our energy vision for 2050?
- Restructure the energy sector to fit that vision
- Acknowledge the planetary limits for water, climate change, pollution, waste
- Do not serve current generations at the expense of future generations. Do not leave a mess for future generations to clean up.
- A just transition should be implemented urgently to avoid further hardship
- Accountability and good governance must be prioritised

Recommendations – IRP

- Evidence based decision-making
 - Use updated costs, include all externalities, reputable sources
 - Reduce demand projections as per reality
- Transparency and robust debate - for deviations from least cost
 - Policy adjustment re climate change/ CSP
- Tough decisions – not political expediency
 - No Coal No nuclear and park grand Inga
- Renewables no limit
 - let the model run without interference
 - Focus on ensuring localisation and community benefits
- Flexibility and frequent adjustment
 - Gas and embedded generation should be flexible options to embrace technology changes

Thank you

The benefits of nuclear power are too few, and the consequences of serious mishap too great, to make it a reliable component of the energy supply the world needs in the decades to come. National Catholic Reporter, March 2011

