



“OPPORTUNITIES IN RENEWABLE ENERGY” WEBINAR

AUGUST 2020





Chanda Nxumalo
Harmattan Renewables
Managing Director
SAPVIA
Spokesperson

WELCOME

Welcome to the “Opportunities in Renewable Energy” Webinar 2020

OFFICIAL SOCIAL MEDIA HASHTAGS

#oire2020
#buildbackbetter with **#womeninenergy**
#sapvia **#sawea**
#energytransformation





You've posted a picture of a strong, independent woman on LinkedIn or Instagram.

What's next?

CHANGE starts with awareness and acknowledgement of a problem.





SAPVIA recognises that our industry is not fully representative when it comes to women, youth and people of colour in the workplace.

We have a number of powerful diverse women at the top of their game, but that is not enough.

SAPVIA and our partner organisations recognise there is more to be done, but we firmly believe it is our actions that will speak louder than any performative content we post online.

So this women's month we are committing to making real changes.

We won't just be celebrating the women already in the renewables industry, we'll be partnering with experts in diversity and inclusion, with a specific focus on women.

And making this a year round discussion – so thank you for joining us for the first step in the journey.





Noma Qase

Department of Minerals and Energy

Director Renewable Energy Initiatives

NOMA QASE

Ms. Qase currently holds the post of Director Renewable Energy Initiatives. She acts as regional coordinator amongst others, for the Energy and Environment Partnership (EEP) which is a programme which promotes renewable energy, energy efficiency, and clean technology investments. In 2001 Nomawethu was a Senior Consultant at Raps consulting and went on to serve as Senior Policy Analyst at National Treasury from 2003 and 2007, with works to ensure that government and corporate policies achieve desired effects and meet minimum levels of efficiency. She holds a Master of Philosophy (M.Phil.), Energy Studies.





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Director Renewable
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PRESENTATION OUTLINE

1. Introduction
2. The context
3. Opportunities for Employment in the RE sector
4. Opportunities for SMMEs
5. How to become part of the Renewable Energy Deployment Legacy?
6. Conclusion





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INTRODUCTION

- The Department formulates energy specific policies, legislation, regulations, programmes, projects, and oversees their implementation to ensure energy security, promotion of environmentally friendly energy carriers, and access to affordable and reliable energy for all South Africans
- The main objective of the Renewable Energy Initiatives Directorate is to ensure the integration of renewable energy into the mainstream energy supply by planning and coordinating initiatives. The focus is on all RE - wind, solar, bioenergy including biogas and small scale hydro power energy sources.
- Intended objectives are to contribute to: diversification of energy supply options; increased security of energy supply through a clear energy mix; increasing access to affordable, modern energy services and options.
- Key policy and legislative enablers included the White Paper on Renewable Energy Policy (2003); Electricity Regulations Act (2006 as amended) & Schedule 2 regulations; Integrated Resource Plan 2010; 2019, New Generation Regulations etc.





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INTRODUCTION

- Significant utility scale procurement of renewable energy projects in SA started 9 years ago, in 2011, in what is commonly known as the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)
- The IPP Office was established mainly for the purposes of handling this and other energy related procurement.
- The objective of REIPPPP is to promote private investment into electricity generation through renewable energy projects. Since 2011 bidding windows for large scale renewable energy technologies and small scale technologies have been opened to procure electricity as per Ministerial Determinations for each technology. Biogas has not fared well on any of these. Solar and wind have the largest share of procured MW to date. **Solar PV** also seems to dominate the small scale embedded generation market while the biogas sector is still lagging behind.
- SABIA, the South African Biogas Industry Association seeks to improve the uptake and contribution of biogas nationally.





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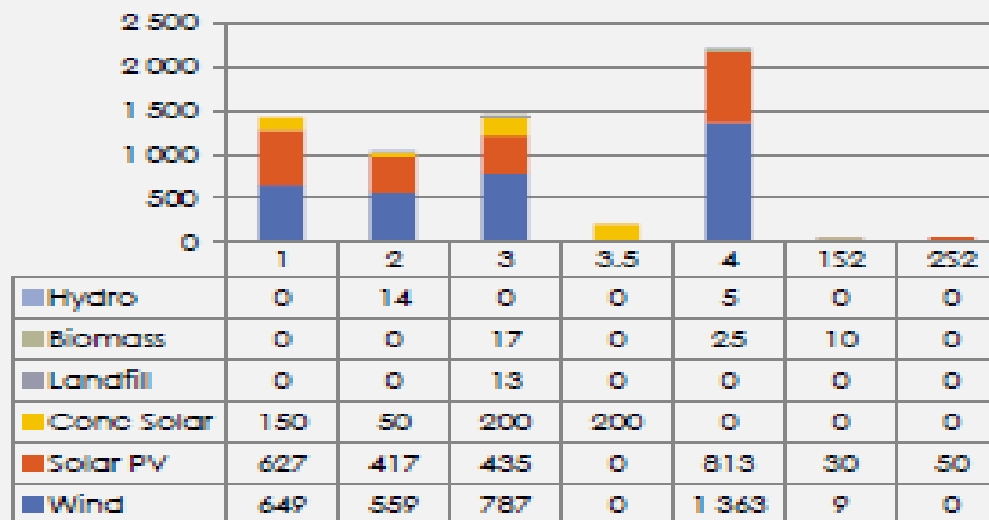


REIPPPP PROCUREMENT TRAJECTORY

From all the seven bid windows, only landfill biogas was procured at Bid window three (BW3), no biogas project was procured under REIPPPP. Solar PV and wind dominated the first two bid windows of the procurement.

Table 1: Technology capacity procured per bid window (MW)

Technology capacity procured Per technology per bid window (MW)





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	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen, Biomass, Landfill)
Current Base	37 149		1 860	2 100	2 912	1 474	1 980	300	3 830	499
2019	2 155	-2373					244	300		Allocation to the extent of the short term capacity and energy gap.
2020	1 433	-557				114	300			
2021	1 433	-1403				300	818			
2022	711	-844			513	400	1000	1600		
2023	750	-555				1000	1600			500
2024			1860				1600		1000	500
2025						1000	1600			500
2026		-1219					1600			500
2027	750	-847					1 600		2000	500
2028		-475				1000	1 600			500
2029		-1694			1575	1000	1 600			500
2030		-1050		2 500		1 000	1 600			500
TOTAL INSTALLED CAPACITY by 2030 (MW)	33364		1860	4600	5000	8288	17742	600	6380	
% Total Installed Capacity (% of MW)	43		2.36	5.84	6.35	10.52	22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)	58.8		4.5	8.4	1.2*	6.3	17.8	0.6	1.3	

- Installed Capacity
- Committed / Already Contracted Capacity
- Capacity Decommissioned
- New Additional Capacity
- Extension of Koeberg Plant Design Life
- Includes Distributed Generation Capacity for own use

- 2030 Coal Installed Capacity is less capacity decommissioned between years 2020 and 2030
- Koeberg power station rated / installed capacity will revert to 1926 MW (original design capacity) following design life extension work.
- Other / Distributed generation includes all generation facilities in circumstances in which the facility is operated solely to supply electricity to an end-use customer within the same property with the facility
- Short term capacity gap is estimated at 2000 MW





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OPPORTUNITIES FOR WOMEN IN THE RENEWABLE ENERGY SECTOR: THE CONTEXT

Framing renewable energy opportunities around projected growth of RE in the energy sector

According to the International Renewable Energy Agency (IRENA) the share of renewables in global power should more than double by 2030 to advance the global energy transformation, achieve sustainable development goals and a pathway to climate safety. This means that for the electricity sector, for example, renewables should supply 57 per cent of global power by the end of the decade, up from 26 per cent today.

Among the reasons for this ambitious goal is that renewable energy solutions are now affordable, readily available and deployable at scale. It is therefore possible to scale up renewables, achieve sustainable development and meet key climate goals at the same time within the next 10 years.

To this end, in January 2020, IRENA declared this period to 2030 a decade of action.





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OPPORTUNITIES FOR WOMEN IN THE RENEWABLE ENERGY SECTOR: THE CONTEXT CONT.

In light of the impact of COVID 19 pandemic IRENA has offered practical advice to countries on key investments and policy decisions towards post COVID 19 recovery, over the period 2021 -2023. The list of policy recommendations includes:

- Safeguarding existing renewable projects and ensuring stable policy frameworks for transition-related infrastructure
- Creating renewable-based, efficient infrastructure, incentivising electric vehicle and biofuel use, and promoting behavioural changes to reduce the impact of travel
- Protecting existing jobs, supporting workforce expansion in transition-related fields, co-ordinating with industries and developing education and training to minimise skills gaps.
- Diversifying supply chains, developing local industries, providing finance and promoting supplier development programmes and industry clusters.
- It further underlines the use of investments to foster equitable, inclusive and resilient economies

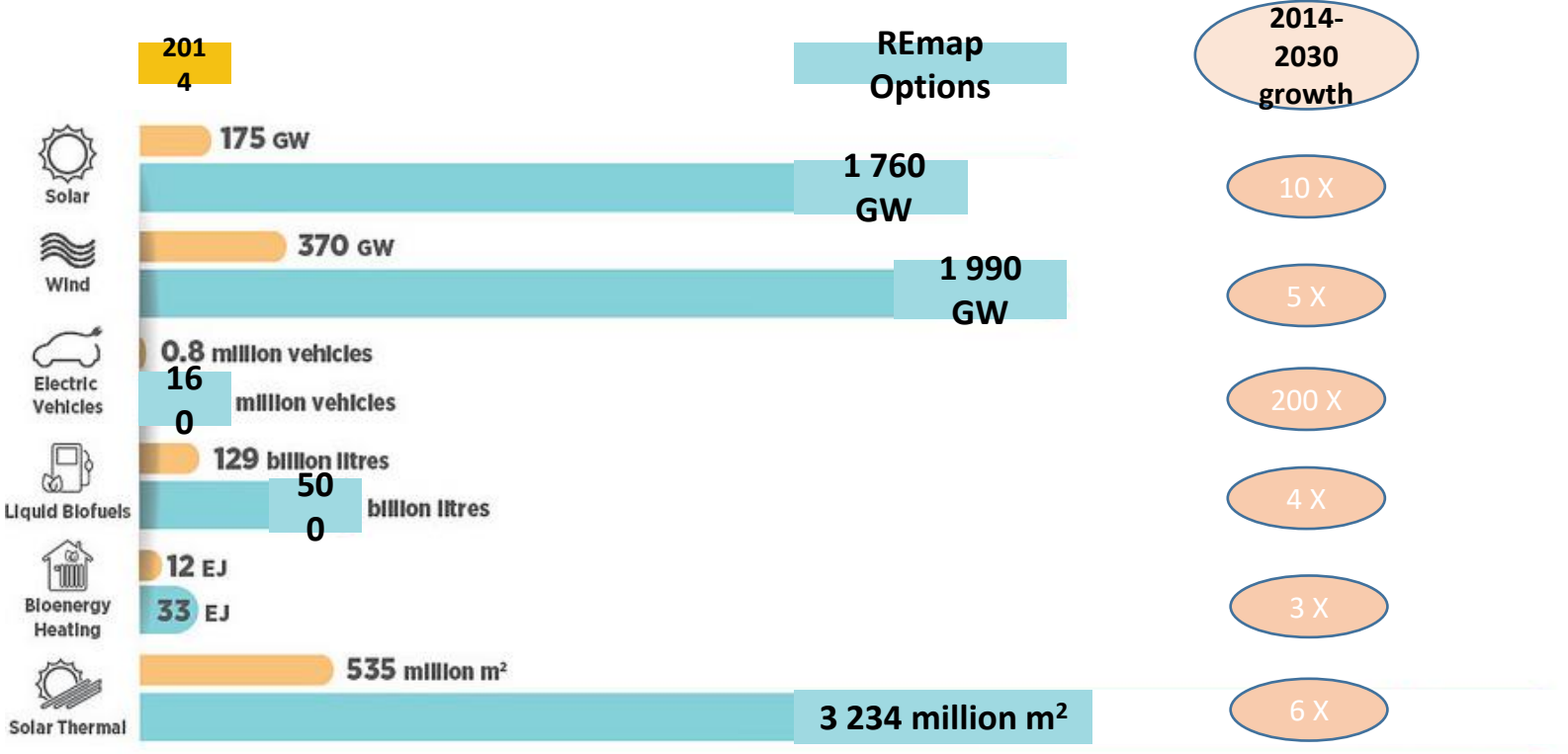




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IRENA’S PROJECTED GROWTH IN SELECTED TECHNOLOGIES, 2016





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OPPORTUNITIES FOR EMPLOYMENT IN THE RE SECTOR

Employment opportunities range from less skilled to highly skilled professionals. Usually a great start for many entrepreneurs before venturing into own businesses.

Employment opportunities are both in the public and private sectors

Training is largely available in many institutions in South Africa, ranging from solar water installations (various institutions), wind turbine service technicians (WTST) to professional degrees. WTST is provided by the South African Renewable Energy Technology Centre (SARETEC) at Cape Peninsula University of Technology) with funding support from the South African Wind Energy Programme. The WTST is a globally sought-after qualification which trains specialized technicians to work on wind turbines undertaking construction, maintenance, service, fault finding and repairs. Original Equipment Manufacturers support trainees with two months' workplace training.

The RE sector is also ripe for entrepreneurs', however to my knowledge historically there has been no training for entrepreneurship, you learned on the job with ambition as your driver/coach!





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OPPORTUNITIES FOR WOMEN - SMMES

1. IPP sector (Large Utility Scale Projects)

- So far, this has been done through government procurement under the REIPPPP, attracting large investors; SMMEs can find opportunities along the value chain facilitated by the localisation requirements/Preferential Procurement Framework
- Private sector initiatives are set to grow – Mining sector, SASOL etc.
- This market is only 9 years old, allowing women, young entrepreneurs and people with disabilities to explore both the public and private sector opportunities that are still opening up.

2. Small scale Embedded Generation

- Solar PV installations in the residential, public and commercial sector buildings are becoming attractive for energy security purposes.
- Biogas installations in municipal Waste Water Treatment Works. Studies conducted by GIZ show that the lowest hanging fruit for implementation of bigger biogas projects lies in the municipal sector where a large amount of electrical energy is also consumed, with a significant potential of reducing costs.
- This is a growing market in South Africa, less than 3 years old.
- To service immediate local communities & take advantage of new opportunities created by the new business models in the SSEG sector. Check at provincial level.





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OPPORTUNITIES FOR WOMEN - SMMES

3. Energy Poverty Alleviation/Access – off grid energy solutions; mini-grid hybrid markets

- The number of people without access to electricity fell from 1.2 billion globally in 2010 to 789 million in 2018. Renewable energy solutions have been instrumental, with more than 136 million people receiving basic electricity services via off-grid renewables by 2018. Therefore, off grid RE solutions are recognised for their potential to reduce the world's energy access gap.
- Off-grid renewable power can come from a variety of sources, ranging from large isolated power grids to solar lights and solar home systems. In addition to households, off-grid renewables provide power for water pumping, street lighting, telecommunications towers, rural schools and clinics, as well as for remote commercial and industrial facilities and other uses <https://irena.org/publications/2019/Dec/Off-grid-renewable-energy-statistics-2019>
- International financial flows to developing countries for clean energy solutions have increased from USD 10,1 billion in 2010 to USD21,4 billion in 2017.





OPPORTUNITIES FOR SMMES

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Off grid energy market is well established in South Africa, started in 2000/01. Budget allocation from the Department over the medium term is just above R213 million in 2020/21; R222 million in 2021/22 and R230 million for 2022/23.

1. A panel of service providers is appointed for a term of 3 years;
2. The basic solar home system currently used comprises the following:
 - A solar photovoltaic (PV) panel (95Wp equates to approximately 475Wh/day)
 - A charge controller
 - Wiring & outlets for small appliances
 - A battery (105Amp-hour)
 - 2x external lights for 12 hours/day
 - 6x internal lights for 4 hours/day





OPPORTUNITIES FOR SMMES

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Women are under represented in this sector even though it has a long term market opportunity

Panel of service providers for the next 3 years will be appointed this year. Women who have an interest in this sector can prepare for the next round, and also look out for opportunities to assist those who are already appointed as there may be capacity constraints. See website for old bid specifications.





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HOW TO BECOME A RENEWABLE ENERGY LEGACY

1. Affiliation with relevant associations, attending RE related events for networking & business partnerships etc.

SAREC; SAPVIA; SAWEA; and a further list emerging from the Renewable Energy Forum facilitated by Mr Chris Yelland from EE Publishers.

2. South African Women in Energy Business Directory

The South African Women in Energy Business Directory is a platform established by the Department of Energy to catalogue women owned business operating in the South African energy industry.

Registration is open for organisations providing goods or services to the energy industry. For more information and forms please go to <http://www.womeninenergy.co.za/>





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HOW TO BECOME A RENEWABLE ENERGY LEGACY

3. Energy Service Companies Market

1. An Energy Service Company (ESCO) is defined as a company that offers a wide variety of energy services such as energy analysis and audits, energy management, project design and implementation, maintenance and operation, monitoring and evaluation of energy savings, and supply of required technologies for the provision of energy services (SANEDI Energy Services Companies In South Africa Report, 2019).
2. The Department in collaboration with SANEDI and GIZ, have developed a national register for ESCOs which is a tool aimed at facilitating market development and growth in this sector.
3. It can be used by public and private sector when identifying, planning, developing, financing or implementing energy projects including energy efficiency and demand side management as well as small scale embedded generation. The register profiles companies, underlining their capabilities and experience using a two tier system. The number of registered ESCOs grew from 54 in 2015 to 100 by 2018. please visit <http://sanediesco.org.za/> for more details and information about workshops and training opportunities.





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HOW TO BECOME A RENEWABLE ENERGY LEGACY

4. Developing Developers Workshop Programme

This is a new and exciting initiative which we would like everyone in this meeting to join in, take interest and support. We know that many women supported the mentorship programme initiated by SAWEA, and we thank you for this sisterhood!

“The top priority of a leader must be to invest in future leaders”, says Dave Kraft. “It takes one to know one, to show one and to grow one”, adds John Maxwell





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CONCLUSION

In conclusion, it is my wish that more and more women participate in the Renewable Energy sector and the energy sector broadly with their diverse fields of study because the energy field is more than just STEM, social scientists, economists, environmentalists, legal experts, finance experts, communicators etc. all have an equally important role to play in this growing sector. We need women leaders.

Any limiting beliefs that you hold about yourself, remember that's all that they are – beliefs that are limiting you from realizing your full potential. Shake them off and show the world the phenomenal woman that you are.

Work to leave a legacy, let everyone know even in your small space that **“you were here and you lived”!**

Let each one of us echo Beyoncé and say:

*I wanna say I lived each day, until I died
You know that I, been something in, somebody's life
The hearts I have touched
Will be the proof that I leave
That I made a difference
And this world will see, I was here* Lyrics by Beyonce





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Department of
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Director Renewable
Energy Initiatives

Thank you



GENDER EQUALITY FOR AN INCLUSIVE ENERGY TRANSITION

Renewable energy employs about 32% women, compared to 22% in the energy sector overall. Still, within renewables, women's participation in science, technology, engineering and mathematics (STEM) jobs is far lower than in administrative jobs.

IRENA estimates that the number of jobs in renewables could increase from 10.3 million in 2017 to nearly 29 million in 2050. The ongoing global energy transition offers the chance to create new jobs and reshape all aspects of how energy is produced and distributed.

Renewables offer diverse opportunities along the value chain, requiring different skill sets. But these opportunities should be equally accessible, and the benefits equitably distributed indispensable role women play in the global energy transition, from leadership roles, through to technical installation jobs and technological innovations.

Source: <https://www.irena.org/newsroom/articles/2019/Jan/Gender-equality-for-an-inclusive-energy-transition#:~:text=Women%20represent%2032%25%20of%20workers,in%20global%20lab or%20force%20participation.>





FOR THE AUDIENCE:

If you had the opportunity to have coffee with someone in the industry, what one question would you ask them?



PANELISTS



Hulisani Neswiswi
Trilemma Impact
Investments & Solar Swop
CEO



Karen de Bruyn
WE Connect
Co-Founder
G7 Renewable Energies
Head of Development



Lindsay Tassell
EDF Renewables
Head of Project
Implementation



Mamoso May
Dorper Wind Farm
CEO



Mercia Grimbeek
Enertrag AG
Head of Project
Development



Ntombifuthi Ntuli
SAWEA
CEO



Rentia van Tonder
Standard Bank Group
Head: Renewable Energy,
Power & Infrastructure





PLEASE INTRODUCE YOURSELF





Karen de Bruyn
WE Connect
Co-Founder
G7 Renewable Energies
Head of Development

A LOCAL DEVELOPER'S PERSPECTIVE

1. What led you to start We-Connect?
2. How do participants join and access?





Mercia Grimbeek
Enertrag AG
*Head of Project
Development*

PERSPECTIVE FROM AN INTERNATIONAL DEVELOPER

1. How are they upskilling local people?
2. What can international companies improve diversity and inclusion in a local context?





Ntombifuthi Ntuli
SAWEA
CEO

INDUSTRY ASSOCIATION PERSPECTIVE

1. What are you doing and how as an industry association can people get involved?
2. Consulting & research – What opportunities are there in that space?





Mamoso May
Dorper Wind Farm
CEO

OPERATIONAL PERSPECTIVE

1. Do you need to be an engineer?
2. What does the landscape look like from an operational viewpoint? Both for careers and for suppliers?





Rentia van Tonder

Standard Bank Group

*Head: Renewable Energy, Power
& Infrastructure*

LENDERS PERSPECTIVE

1. How does the bank look at the sector and approach risk?
2. What opportunities do you see coming through for investors and suppliers?
3. What would you advise attendees to focus on?





Lindsay Tassell
EDF Renewables
Head of Project Implementation

ENGINEERS PERSPECTIVE

1. What is it like being a woman in construction?
2. What is EDF doing as an international player to support diversity?
3. How can people participate in the construction phase, both as individuals and as businesses?





Hulisani Neswiswi
Trilemma Impact Investments
Solar Swop
CEO

SMALL SCALE EMBEDDED GENERATION PERSPECTIVE

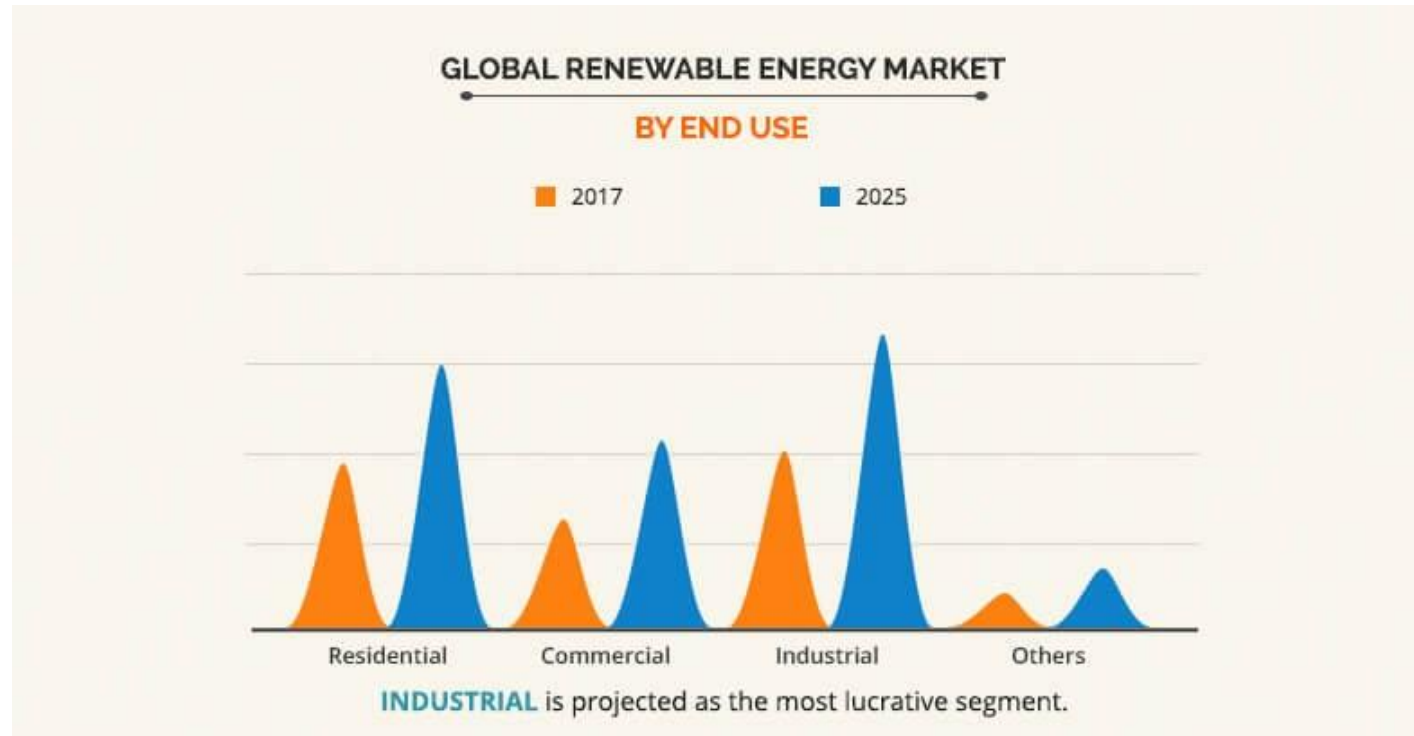
1. How is the SSEG sector different from the utility scale sector?
2. What opportunities do you see?



SSEG OPPORTUNITIES



Hulisani Neswiswi
Trilemma Impact Investments
Solar Swop
CEO



RE estimated \$1,512.3 Trillion global market size in the next 5 years of which

1. Solar energy segment is expected to grow at the highest growth rate during the forecast period.
2. The residential market being the second largest consumers
3. The growth being driven by both pull (demand from property owners) and push (drive from utilities providers) factors





Hulisani Neswiswi
Trilemma Impact Investments
Solar Swop
CEO

APPROACH TO SSEG OPPORTUNITIES

Skills Driven Approach with an application/specialisation in RE

Highest Earning Career Paths:

- Engineering
- Finance
- Construction/Installation
- Software
- Plant Operations
- Training and Development







QUESTION:

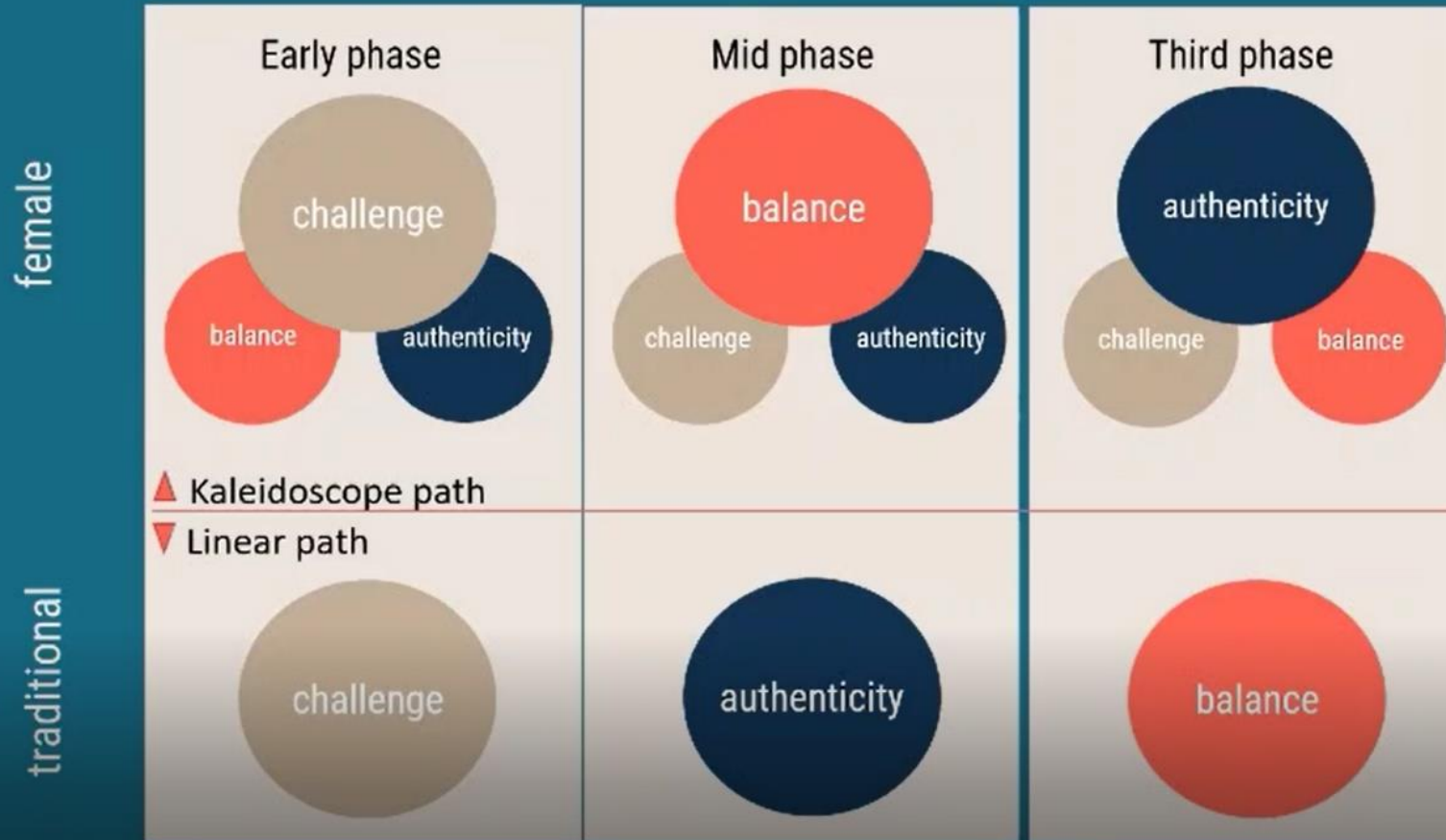
So you've hired a woman...now what?

How do we get buy in from male managers and senior individuals to promote diversity and inclusion not only during the hiring process...but through an individuals career?

1. How are we addressing issue with pay gaps?
2. Representation in senior management and executive roles?
3. Job satisfaction and access to opportunities?
4. Room for growth an industry founded on the very principle that there is a better way forward?

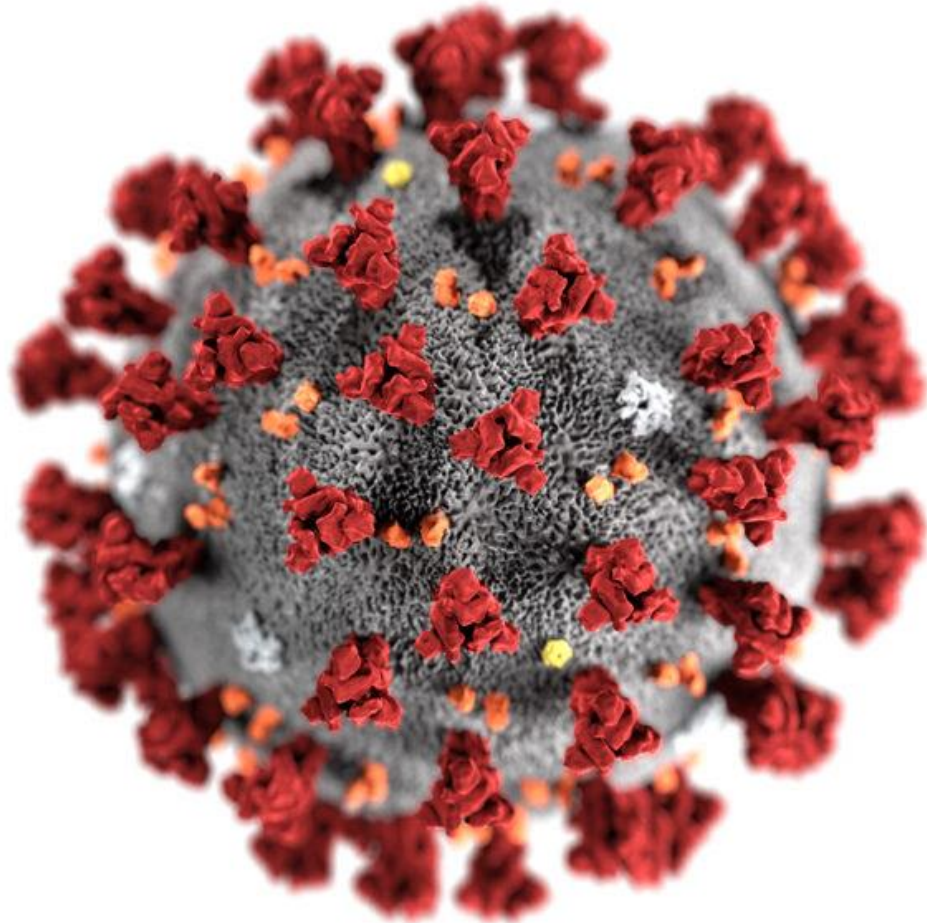


Career Development: gender differences



Kaleidoscope Career Model: Mainiero and Sullivan 2006/7





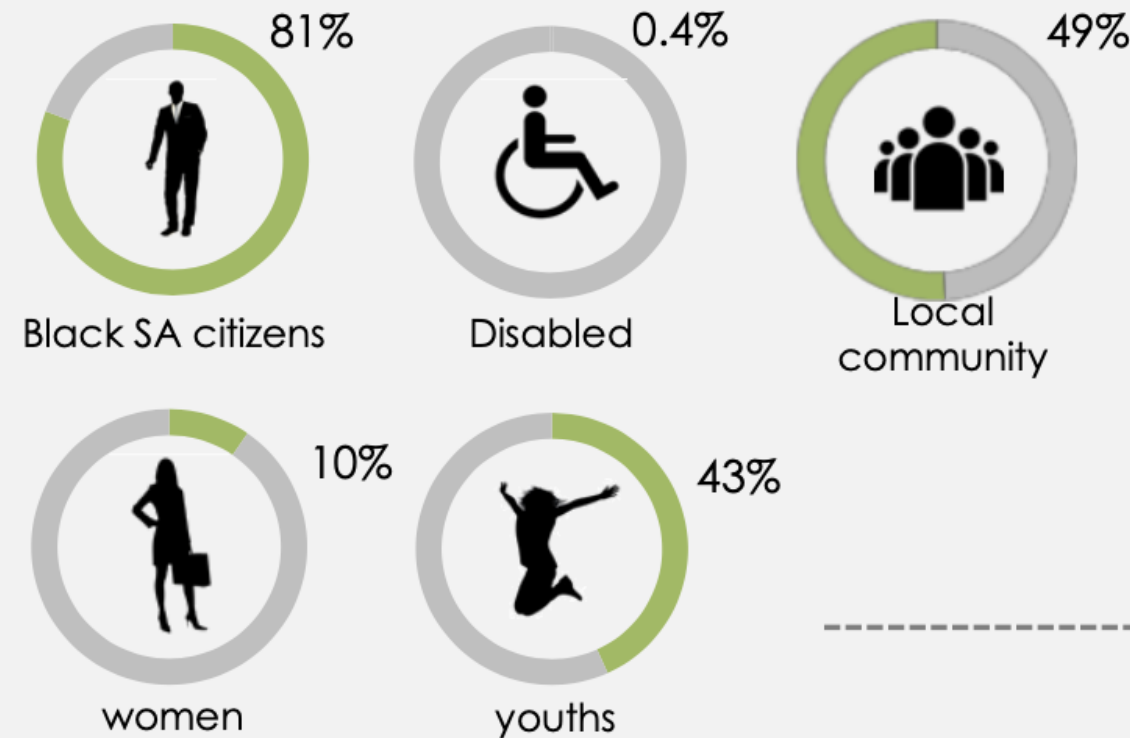
QUESTION:

How has COVID-19 changed things?



Employment equity share of persons employed in construction

(% job years vs total) (active projects)¹





QUESTION:

If you had the opportunity, what advice would you give to your younger self when you had just entered the renewables industry?





Danielle Harding
ED Platform
Senior Consultant

DEVELOPING RENEWABLE ENERGY SUPPLY CHAINS





Economic Development Advisors to the Renewable Energy Sector



edplatform.com





BEYOND COMPLIANCE



LABOUR PRODUCTIVITY



**PHYSICAL
CAPITAL**

**INTELLECTUAL
CAPITAL**

**HUMAN
CAPITAL**



BEYOND COMPLIANCE





 Suite 9, 1st Floor,
Katherine & West,
114 West Street,
Gauteng, 2196

 **(+27) 011 268 0179**

 **info@edplatform.com**

 **www.edplatform.com**

 **EDPlatform**

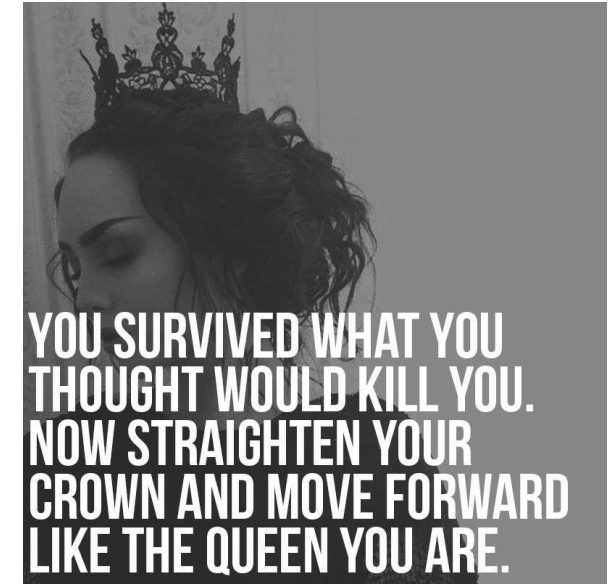




HOW DO WE DRIVE EFFECTIVE CHANGE?



Fix another Queens crown without telling the world it was crooked👑



WHEN **WE** HELP EACH OTHER, WE BOTH **WIN**

WHEN WE WORK **TOGETHER**, **WE** CAN DO MORE AND **GO FURTHER**





“DEVELOPING DEVELOPERS” WEBINARS

Every month should be women's month and we are committed to **uplifting**, **empowering** and **supporting** women, youth and black people to avail of the great opportunities in the sector.

That's why we are launching the “**Developing Developers**” webinar series.
Partnering with experts in their fields we will be unpacking renewable energy projects, how they work, what you need to know and how to get involved!



DEVELOPING DEVELOPERS

WEBINAR 1

Understanding the REIPPPP RFP

WEBINAR 2

Fundamentals of RE Project Development

WEBINAR 3

The Legal Outlook: Contracts and Agreement

WEBINAR 4

The Financial Outlook: Bankability to Financial Close

WEBINAR 5

The Socio-Economic Impact

WEBINAR 6

Commissioning Projects: Engineering Procurement Construction

WEBINAR 7

Operating Projects: Operations & Maintenance and Asset Management



THANK YOU

To find out more on how you can get involved in our “Developing Developers” webinar series, please contact us on:

marketing@sapvia.co.za





Melissa Bender
Messe Frankfurt
Head of Marketing

