

1st SAAEE Energy Economics Conference 2019

**Possible Support for SMMEs in
the Energy Sector**

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Presentation Outline

- Introduction and background
 - Problem statement
 - Methodology
 - Results
 - Recommendations
 - Conclusion
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The industry status

- Globally, there's an energy transition taking place, with a shift from old sources of generating electricity to cleaner ones.
 - This is motivated by various reasons that includes the greenhouse gas emissions, the natural resources that are depleting, aging infrastructure etc.
 - Such changes presents opportunities for various parties, as seen with the implementation of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).
 - Such opportunities to be accessed by SMMEs
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Role played by SMMEs

SMMEs contribution to the South African economy

- With about 36% contribution to the GDP (Business Report, 2017)
- With the total of 47% of the workforce employed by SMMEs (BUSA, 2019)
- Contribution to corporate tax is 6% from SMMEs (BUSA, 2019)

Therefore, SMMEs do have a meaningful role to play.

Motivation for supporting SMMEs

- Due to their flexibility, innovativeness, SMMEs are seen as having a potential to contribute positively to the development of the economy.
- Therefore, with the sector that is diversifying and growing, such as the energy sector, support for SMMEs in the energy value chain, is critical.

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Problem statement

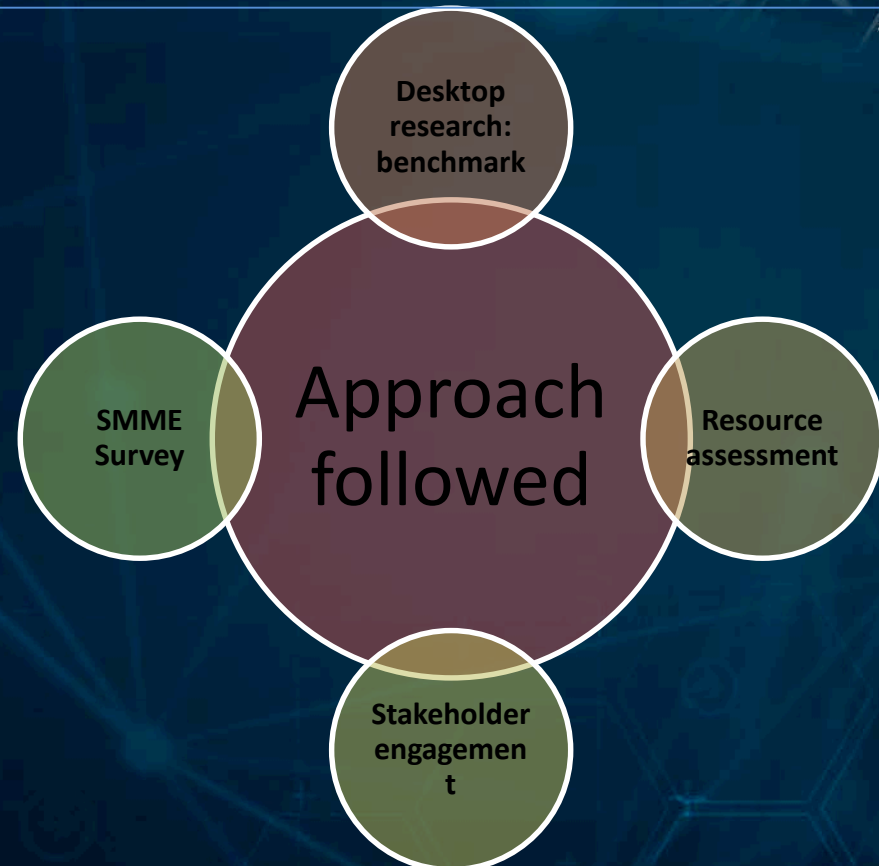
- Survey results from a study conducted by CSIR Energy Centre to determine the level of participation by the SMMEs, indicated that there's a need for intervention.
 - In the formal energy procuring programme (REIPPPP), feedback from the key role players indicated that there's a lack of participation by SMMEs, due to various issues (incl. the lack of skills).
 - Therefore, to increase the level of participation by SMMEs, an intervention is needed, by providing the necessary support.
 - CSIR Energy Centre is investigating possibility of setting up an industry support programme for SMMEs, focusing on the energy sector.
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Approach followed

To ensure a holistic approach: benchmarking, internal assessment, sourcing input from industry and the target market.



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Barriers of entry for SMMEs



- The participation of SMMEs in the energy value chain is hindered by a number of challenges.
- These are some of the ones highlighted by industry.

Benchmarking: Support for SMMEs

- The economies of some countries (especially of developed countries like the UK, US), to a large extent, are built by activities of the SMMEs. They are seen as the driving force of the economy
- Such countries provide support to these SMMEs to encourage growth and sustainability, due to the realities that the challenges experienced by the SMMEs, cause their ideas to be short-lived
- Various interventions are provided

Benchmarking: Support provided

- SMMEs operating in clean energy sector in the United States (US) gets the necessary support, through incubation programmes
- Research findings show that the developed countries such as the USA, UK, takes keen interest in supporting the development of the innovators with business concepts



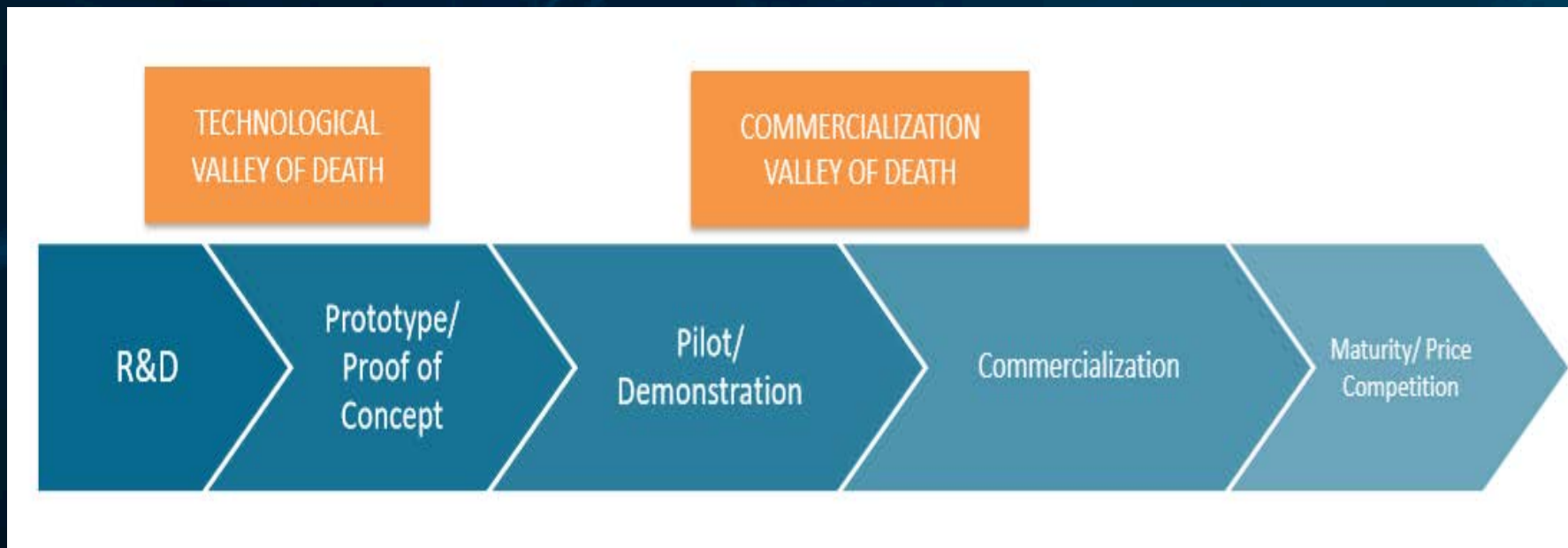
Benchmarking: Case study- NREL

Learnings from National Renewable Energy Laboratories (NREL)

- They collaborate with industry to facilitate the incubation and development of the entrepreneurs, and make use of their infrastructure as a de-risking measure and field test
 - The incubation programme gets support from the US DOE and funds from industry. Example: Wells Fargo Innovation Incubator, to the value of \$30mil.
 - NREL uses their technical expertise and infrastructure to support the entrepreneurs. They use industry to 'test in the field'.
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Benchmarking: Case study- NREL

NREL Approach



Capabilities: Energy Research Groups

Hydrogen storage

- Development of cost-effective hydrogen storage systems
- Portable power and fuel cell vehicle applications.
- Porous materials, application: methane storage, CO2 capture & storage, H2O treatment, catalysis
- Facility equipped with: autoclave, split tube furnace, microwave/ultraviolet/ultrasonic synthesis reactor and more

Energy Supply

- Capacity building at the solar facility
- Smart monitoring of solar PV plants to ensure quality and performance over the lifetime
- Qualitative data on the reliability of solar PV modules
- Resource assessment, robust forecasting, Thermal Energy Storage technology development

Battery research

- Battery materials development
- Development of renewable energy storage technologies from various materials
- Facility tests the technologies with a specific focus on battery cathode materials, titanium-based anode materials

Energy Systems

- Energy system planning and optimisation
- Technology development and commercialization

Combustion and gasification

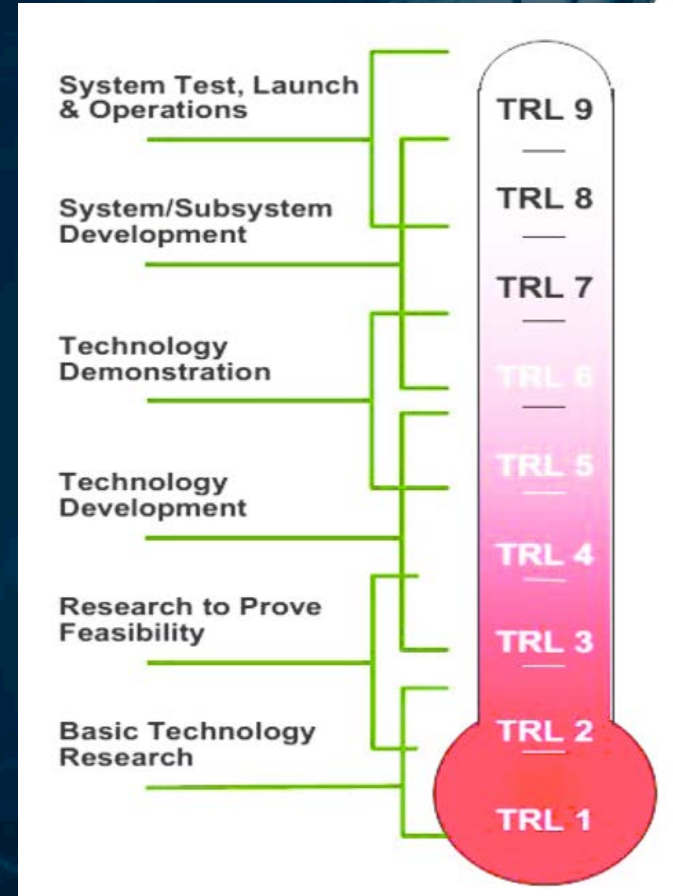
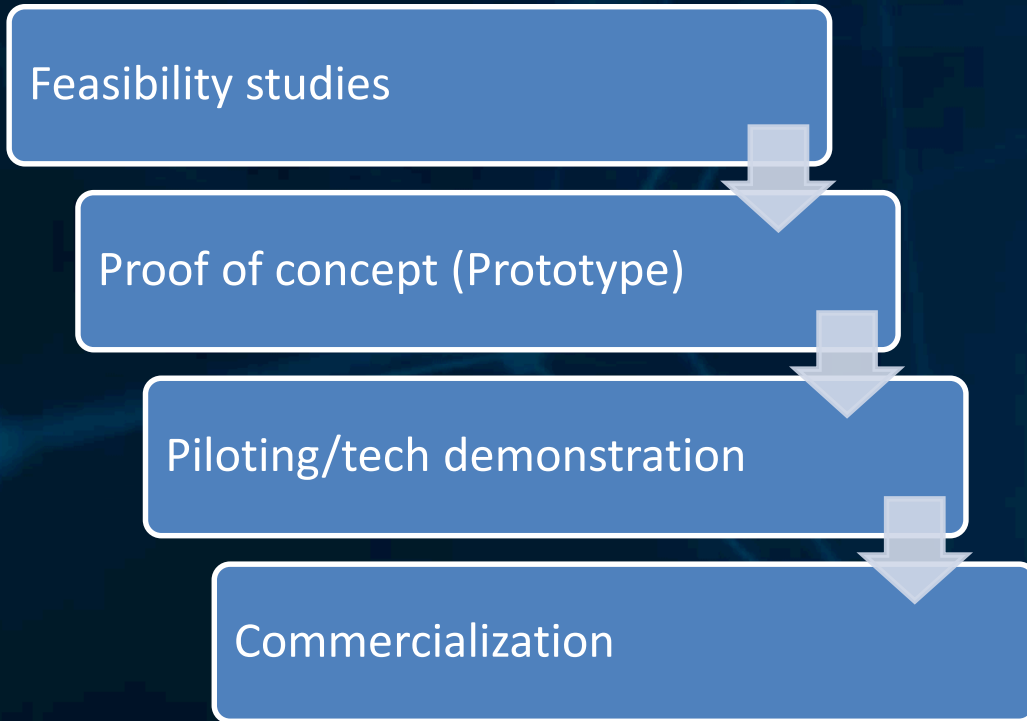
- Combustion and gasification pilot plant for R&D, with capabilities such as fluidised bed combustion, gasification and pyrolysis of coal and opportunity fuels
- Service to clients who wish to assess their fuels, in the form of hot gas, steam or electricity
- Fuel assessment
- Samples of ash and gaseous emissions can be generated to assist with EIAs

Energy Demand

- Local production of energy efficiency (EE) and demand shaping technologies
- Services in Energy Efficiency and cost effective mechanism to promote EE

The aim is to develop the Intellectual Property (IP) that is found within CSIR and other research institutions.

Capabilities: EISP envisaged approach



This will help reduce technology risks and accelerate technology to market.

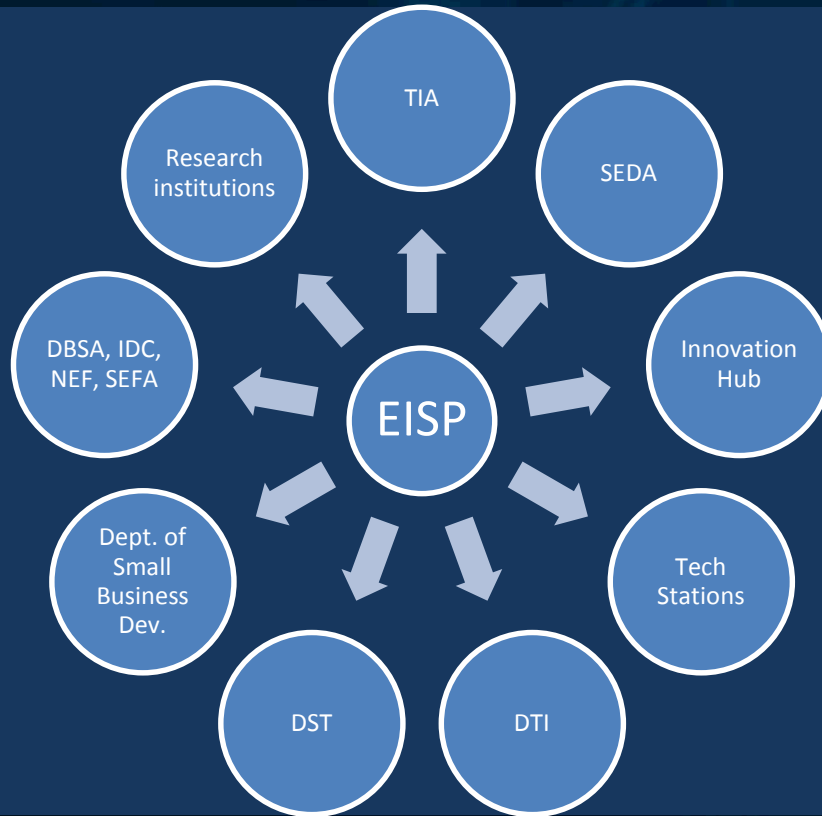
Input from the industry

- To ensure alignment of the programme with the needs that exist for SMMEs, they are given an opportunity to give input, based on the concepts they need assistance with
- A survey is already out, manual distribution commenced and a web-based is being finalized. Social media distribution and direct communication.
- Feedback will be consolidated and considered when finalizing the service offering of the programme.

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Call for stakeholders



Collaboration

- The success of the SMMEs in the programme will be based on the support from the energy eco-system.
- We call for industry support: implementation funding, enterprise development, market access, IP access

Request for assistance

- It is clear that the world is transitioning in energy sources, so is South Africa, and this presents opportunities that SMMEs can leverage on.
- However, the SMMEs are struggling to access these opportunities due to numerous challenges, therefore support is required
- CSIR calls for entities that are willing to **collaborate** and assist with the resources required, for the establishment of the programme.

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Some quotes from NREL:

- “**Leadership in energy innovation** depends on the ability of **entrepreneurs** to develop and successfully bring innovative technology solutions to market.” The Joint Institute for Strategic Energy Analysis (JISEA) on behalf of US DOE
 - “The U.S. Department of Energy (DOE) invests millions of dollars every year in the U.S. national laboratories, yet without **industry engagement** and a **business mind-set** at the labs, that investment has limited economic return.” Energy I-Corps US DOE
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Way forward

- We request your participation on the survey that will be communicated with the stakeholders. Kindly share your contact details in order for us to share the link.
- We request the entities that are keen to support the programme, to also make contact for further discussion.

Ng'yathokoza,

Thank you!!

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