



27th AMEU Technical Convention 2019

The 4th Industrial Revolution (“4IR”) | *Building the Power Utility of the Future, Today*

The Utility of the Future Distributed Power Generation Enabled by the Internet of Things

Presented by Dr Cathy Pickering

Solution Architect

FuseForward South Africa (Pty) Ltd

Hosted by



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- Based in Johannesburg; offices worldwide
- We empower utilities to make the most of their data with secure cloud environments and analytics
- We serve a range of industries including utilities, municipalities, facilities and transportation

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Introduction

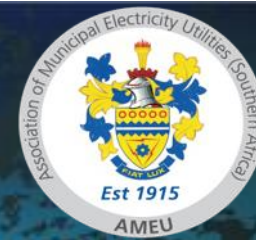
- Current power generation:
 - 91.2% thermal power stations
 - 8.8% renewable energy
- Intelligent Utility of the future will:
 - Make generation, distribution and management responsive to community needs
 - Increasing percentage of power from smaller, more agile renewable energy sources
 - Security important consideration for Intelligent Utility



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Research Projects

Intelligent Systems Research Network

- Intelligent IoT and Big Data apps
- Academia, industry, tech

Industrial campus building portfolio

- Analysis

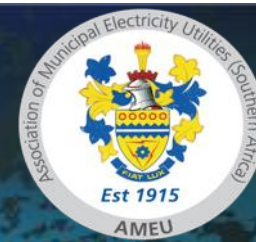
AI and ML to energy management

- Will inform Intelligent Utility

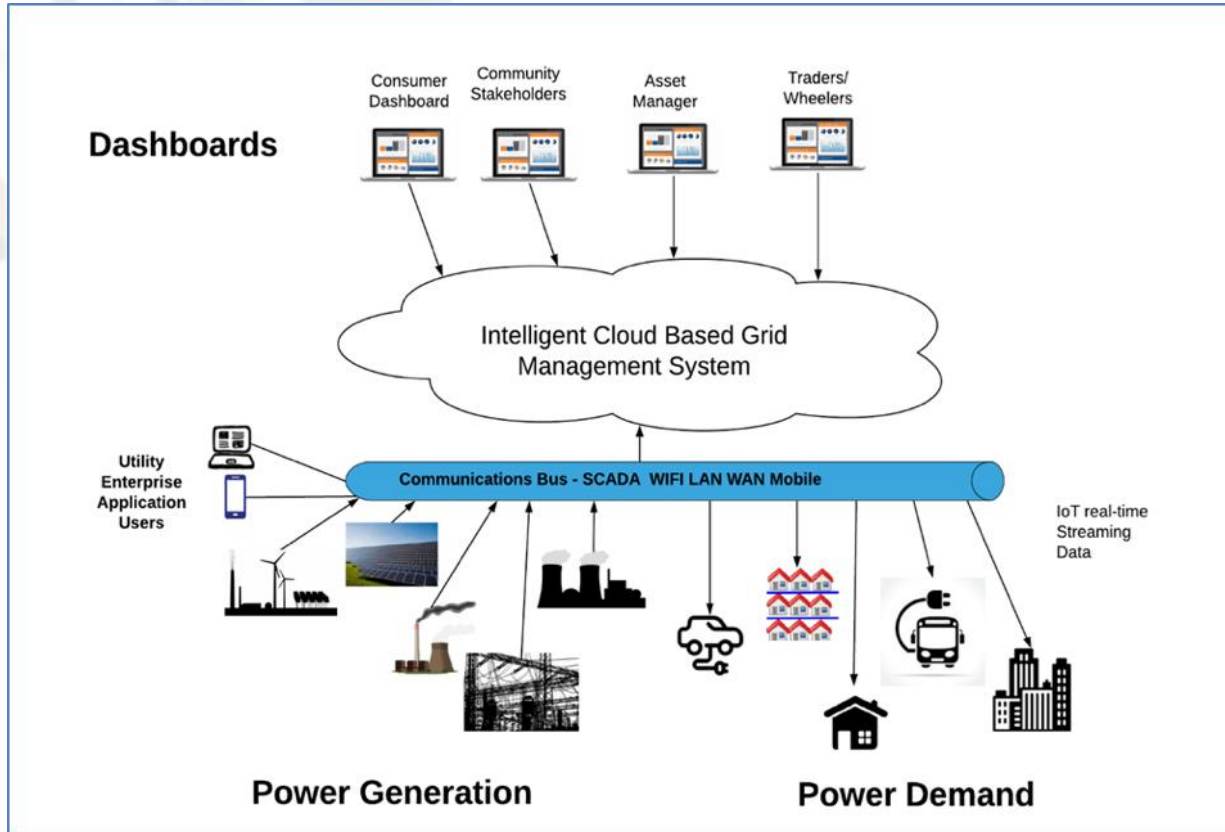
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Intelligent Utility

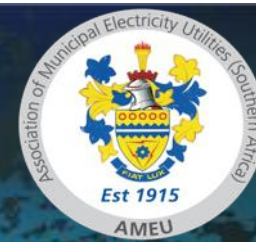


Encompasses key NIST priority areas for Smart Grid

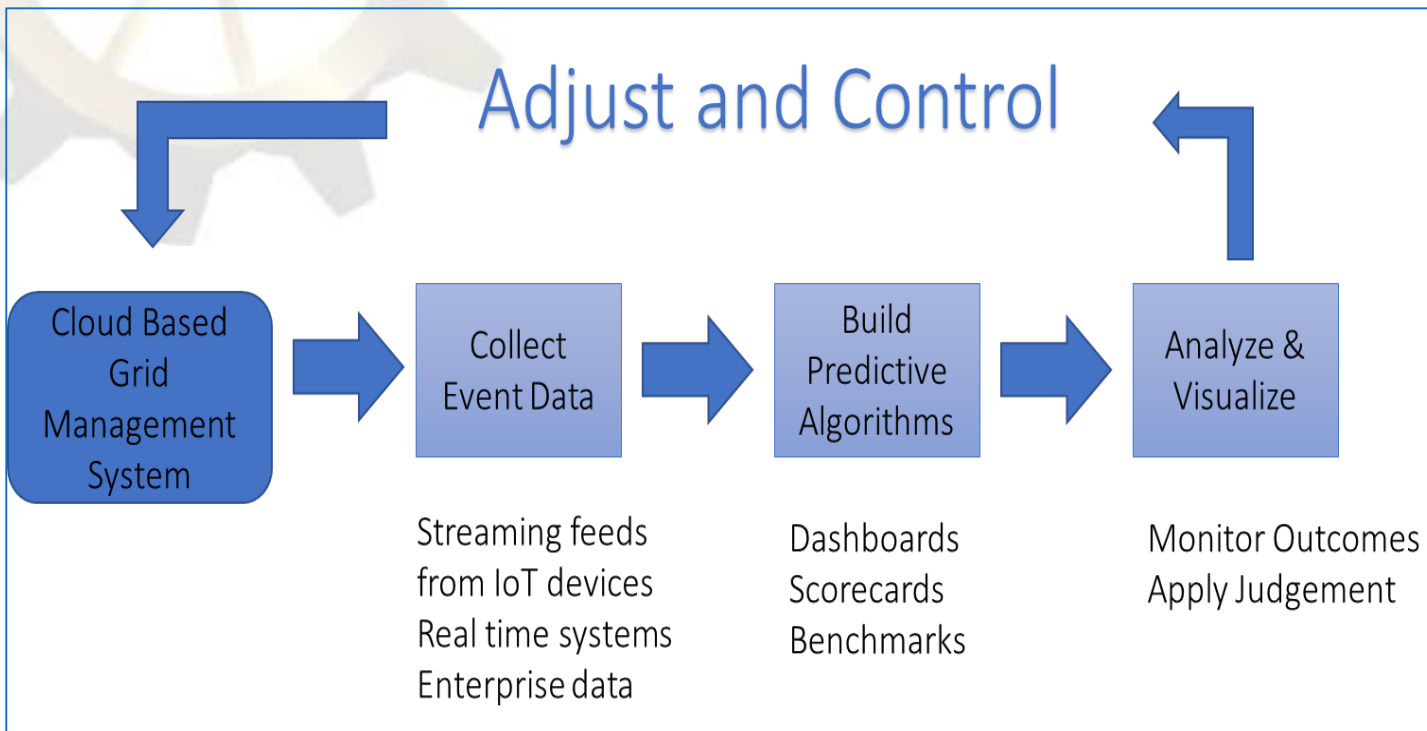
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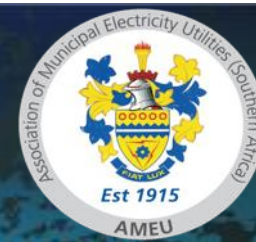
Cloud Based Grid Management System



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Key Considerations For Implementation



Security



Reliability

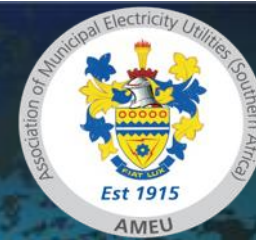


Scalability

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Role of Municipalities



Assist communities

Manage IoT systems

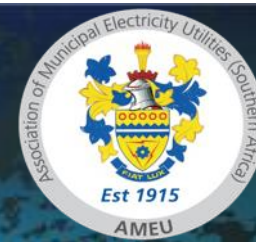
Security and compliance

- Municipal business models:
 - Building generation capacity
 - Energy procurement
 - Facilitation

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Challenges

Risk averse

Validation
and testing

Acceptance
of change

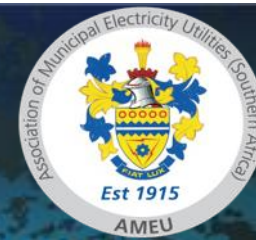
Regulatory
and financial



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Getting Started



1. Pilot demonstration
2. Micro grid
3. Regional grid
4. Integration



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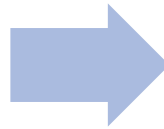
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Conclusion

Intelligent
Utility

- Enabled by IoT



Power
generation

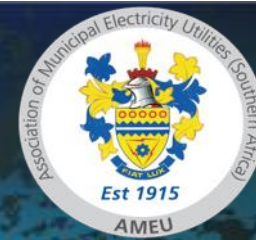
- Increased renewable energy

Participate in our Pilot!

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Thank you

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