



## SUMMARISED RESPONSE TO PANEL QUESTIONS

1. *How would you describe the key **challenges** that the 4<sup>th</sup> IR will bring to the electricity utility business?*

To fully appreciate the impact/challenges of 4IR we should see them in context of a wider set of colliding megatrends:

- Rapid urbanization putting pressure on urban infrastructure and among others the need for cheap, reliable and clean energy,
- Demographic & social change – young fast growing, always on generation – high expectations and demands – increasingly used to chose
- Climate change & resource scarcity – driving a transition to cleaner energy and putting pressure on the costs and moral acceptability of traditional energy sources,
- Technology breakthroughs – both enabling and disrupting – the 4IR technologies combined with technology breakthroughs in distributed RE generation, storage, smart network, grids, meters and grid edge technologies are and will continue to make the status quo an impossible choice,
- Economic shifts – rapidly changing establish trade patterns, sources of competitive advantage, economic growth, FDI and competition for talent

We see all of these forces at play in our cities. In fact, many would argue that we are at an inflection point of a dramatic socio-technological transformation.

Don't think of 4IR as an incremental set of technologies being adopted by others – e.g. mature market leaders. The sector disruption is happening everywhere and faster than we thought. As we've seen with telcos, banks, retail, etc, its real and it is here. The future provides a dizzying variety of choices but less certainty than ever before. There is no "one right way"!

2. *How would you define the opportunities that the 4th IR will present to the electricity utility business?*

4IR together with the energy specific technologies including Renewable Energy, Storage, EV, gas, provide the opportunity to develop new business models and new operating models – in fact we simply have no choice.

In reality none of us can conceive how the next generation internet, machine learning/AI, 5G, blockchain and big data will change our world – from query, transactions, apps and tools to an internet that makes most of your choices for you – disintermediating, disrupting, re-inventing, enriching and empowering as it goes .

Think about a future world where the **customer** rather than the **asset** is at the centre of a utility's universe. Where through platforms and ecosystems of capabilities, partners and an intimate knowledge of our customers - we provide energy as a service, a mix of energy alternatives including gas at scale, smart homes outsourced rooftop PV and storage, energy management, differentiated pricing options driving optimal behaviours, low cost feed in power from prosumers and DRE providers, electric mobility options & charging, broadband/fiber, home security.

Actually, this scenario is one of many potential options and choices utilities will need to consider in this new Decarbonising, Distributed and Digitized world – customers with choice will make these demands – and/or new entrants and non-traditional competitors will fill these spaces.

**3.** *What is your view of the **current fitness/ readiness** status of the electricity utility businesses to leverage the opportunities presented by the 4<sup>th</sup> IR?*

From research across a range of cities and key indicators we see a mix of factors influencing performance and readiness.

- Increased cost of supply - Eskom and Utility performance – high double digit tariffs, can we pass this on in a world of declining demand and alternatives
- Uncertainty about reliability and price path – making long term investments risky
- Outdated and constraining regulatory environment dating back to 2011
- Customer mix, energy efficiency and behavioural change reducing overall demand for electricity
- Increased customer choice and control – manage consumption, own generation, storage
- Technology disruptions and market forces
- Asset owner versus customer centric - monopoly service, unresponsive to client needs
- Illegal connections and unmetered consumption - migration/urbanization - overcrowding
- Electricity provision and payment politicised – not treated as a service but a basic right
- Lack of separation between political and managerial involvement
- R68bn backlog in distribution infrastructure maintenance and expansion – unsustainable demand
- Planning, prioritised resource allocation, good practices
- Workforce skills tech savvy not fit for the future(customer centric, digital, IOT,) data scientists, analyst, digital/tech savvy, customer service centric, technical, commercial
- Limited innovation and use of new technologies
- Challenge in attracting / retaining good talent resulting in Customers going off-grid as alternatives become viable
- Energy and transport/mobility in a broader context
- Climate - Environmental and health related– unacceptable levels of Nox, Sox, Co2 and particulates in most of our big cities causing significant damage to our health and the environment.

Some cities are moving faster than others in embracing the disruption and opportunities. In general, from research and work with over 100 utilities from across the globe there are concerns about level of readiness. If global class leading utilities feel they aren't ready, then perhaps in the main – neither are we?

4. What are the **key enablers** (e.g. policy, regulatory, etc.) that should be in place to facilitate the future readiness or is it up to the leadership to grab the opportunities and to position the business to be fit to face the future? **How should utilities prepare/progress towards the future**

For future readiness – is it a case of “solve the challenges facing our utilities/save our utilities” or “how do we become a trusted partner/platform orchestrator in providing the cleanest, cheapest most reliable source of energy to power our economies and to improve the lives of our people.

To be future ready we should consider: Creating **Business of Today Teams** to optimise the “business of today” – do the basics better and create some headroom/dry powder for investment. Could deliver a 10-15% uplift

In parallel create **Business of the Future Team's** – collaborate across multi competencies and across cities to learn about and think about the business of tomorrow/business of the future – create hypothesis and pilot/field test business models, operating models, prototypes and concepts – set the course/flightplan for the next 5-10 years.

5. What is that **one thing** that electricity utilities should do: **to be “fit” to face the future and to build the power utilities of the future, today?**

The key trends within the sector over the last 10 years signal a darkening horizon. Higher cost, less reliable and dirty power with a changing customer – utilities in the death spiral.

We cannot and should not take much longer to architect our journey back into the light. We've come a long way and are blessed with many of the ingredients for success.

We need thoughtful, pragmatic and bold leaders and strategies to embrace this future.