Empowering Green Energy and Solutions

Bali, Indonesia
December 2012

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Cascadiant Company Profile

- Headquartered in Singapore and founded in 2010, Cascadiant is a green energy solutions integrator (SI) and managed energy service provider with 41 employees and 5 project offices (Australia, Nigeria Indonesia, Vietnam, and Pakistan)
- Our corporate mission is to provide turnkey, highly reliable power and clean energy solutions by integrating the very latest in green technologies to reduce an operator's carbon footprint as well as immediately lower overall operating costs associated with power
- Cascadiant integrates all elements of an energy solution into a fully managed service built around our in-house developed software platform and wrapped in a multi-year fixed priced Managed Energy Service (MES) contract that transfers both the financial risk and technology risk from the customer to Cascadiant
- Commercial projects in 6 countries: Indonesia, Australia, Vietnam, Israel, Pakistan, and Nigeria

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The Vision – 2009

"WE MUST TELL THE WORLD IT IS POSSIBLE TO CURE THE GLOBAL ECONOMY AND SAVE THE PLANET AT THE SAME TIME"

G-20 Leaders Summit Speech
25th September 2009, Pittsburgh, PA, USA

H.E. Dr. Susilo Bambang Yudhoyono
President of the Republic of Indonesia

WHAT HAS HAPPENED SINCE……

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The Vision - 2011

The National Plan for the Reduction of Greenhouse Gas Emissions Statue

Signed and Released 26th September 2011, Jakarta, Indonesia

H.E. Dr. Susilo Bambang Yudhoyono
President of the Republic of Indonesia

WHAT HAS HAPPENED SINCE……

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The Vision - 2012

Announcement of the Governmental plan to reduce importation and consumption of oil by 20%. State Owned Enterprises were challenged to lead this effort by switching to the use of alternative fuels from domestic energy sources and to rapidly adopt solutions that optimize energy efficiency.

4th June 2012, Jakarta Indonesia

H.E. Dr. Susilo Bambang Yudhoyono
President of the Republic of Indonesia

WHAT HAS HAPPENED SINCE……

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Telecom Industry's Environmental Impact Is Significant

- Global communications sector emissions are expected to triple from 0.50 billion tons CO_2 in 2002 to over 1.5 billion tons CO_2 by 2020 and growing to more than 5% of the world's total emissions from human activity
- Each back-up generator running 30 hours a month equals over 1 car's CO_2 and each off grid site using generators emits the CO_2 of more than 24 cars
- Replacing the 800,000 off grid sites using generators added in just the last 3 years with the green alternatives would be equivalent to:
  - Taking over 20 million cars off the road
  - Planting over 100 million acres of trees
  - Abating more than 7.5 million tons of CO_2
- ASEAN and ME/A spend over $3B deploying lead acid batteries each year
  - UNICEF 2010 report attributed lead contaminated water the single largest contributor to stunted cognitive development in Asian children
  - Improper disposal of VRLA batteries sighted as a significant contributor
  - Improper safety precautions in the lead recycling process reduces a worker's life expectancy by 9 to 12 years
- Operators using ozone depleting AC comfort air conditioners consume an average 40% more energy than needed to cool indoor sites resulting in excess power being consumed, greater grid demand and a larger carbon footprint

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Cascadiant's 21st Century Green Solutions





Green Fuel Cells

A direct replacement for diesel generators on sites requiring up to 5kW of off-grid or back-up power. Converts methanol, hydrogen and LPG into clean, extremely reliable and cost effective DC electricity.



Advanced Cooling Systems

A direct replacement of R-22 Ozone Depleting AC comfort air conditioners. Advanced cooling operating in AC & DC modes with remote management. Shows power savings of more than 60%.

CASCADIANT energy

Network Operations Center

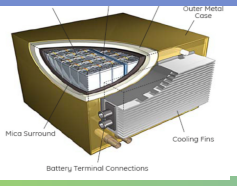
Cascadiant fully networks and integrates all solutions into an in-house developed 7/24 network operations center that monitors, manages and controls all aspects of a customer's power operations, field service, maintenance, spares management and re-fueling service.



Next Generation Batteries

A direct replacement for lead acid using lithium and sodium. Rapid recharge with very long cycle life. A 55°C operating range that eliminates the need for cooling and results in lower power consumption.





Cloud Site Monitoring and Control

Allows for full remote monitoring, control and management of all power and energy functions within a network. System reacts in real time to optimize performance and energy consumption.



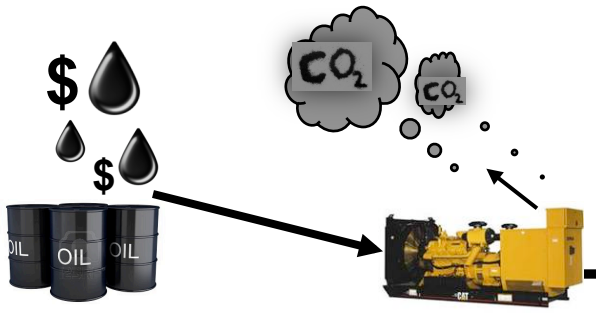
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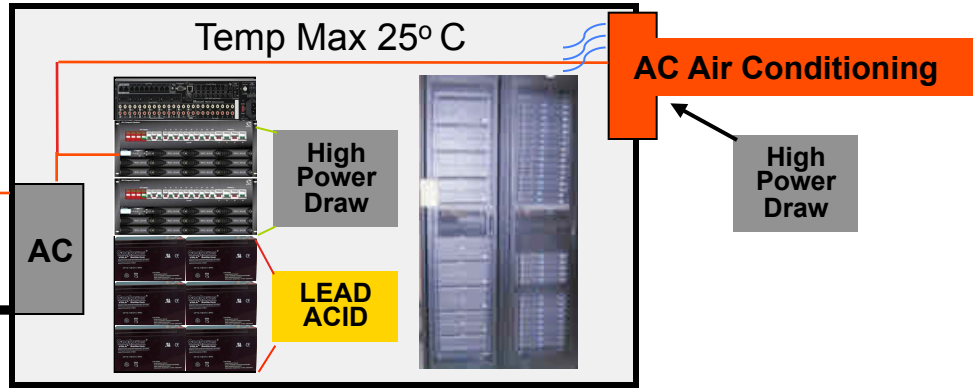
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Using 19th Century Solutions For 21st Century Problems

AC Power Grid





BACK-UP POWER GREEN TRANSFORMATION

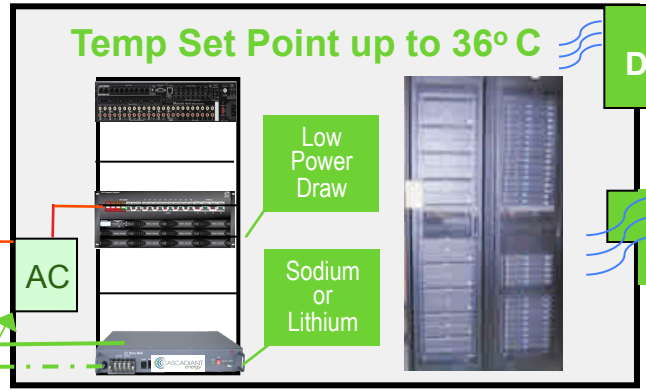
AC Power Grid





Remote Monitoring and Control

50% decrease in distribution panel





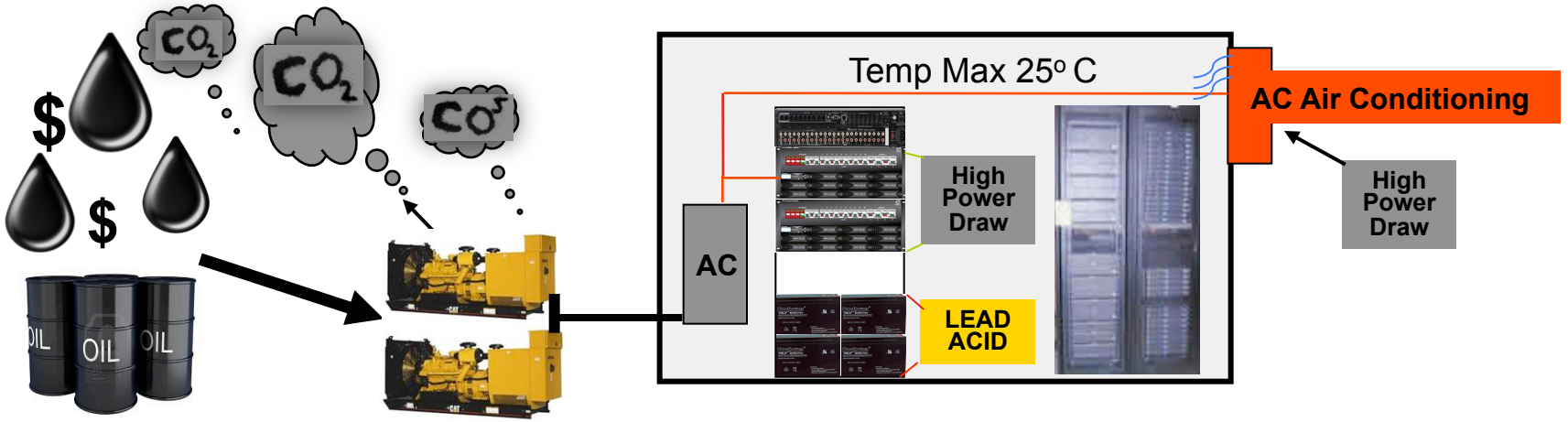
Remote Monitoring and Control

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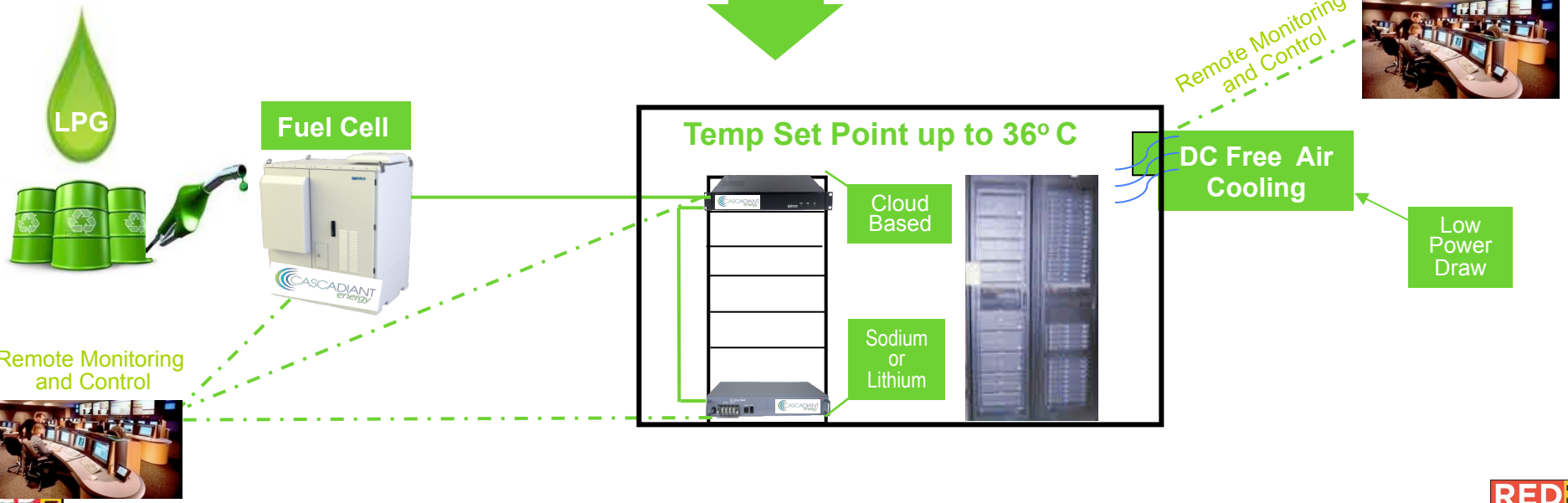
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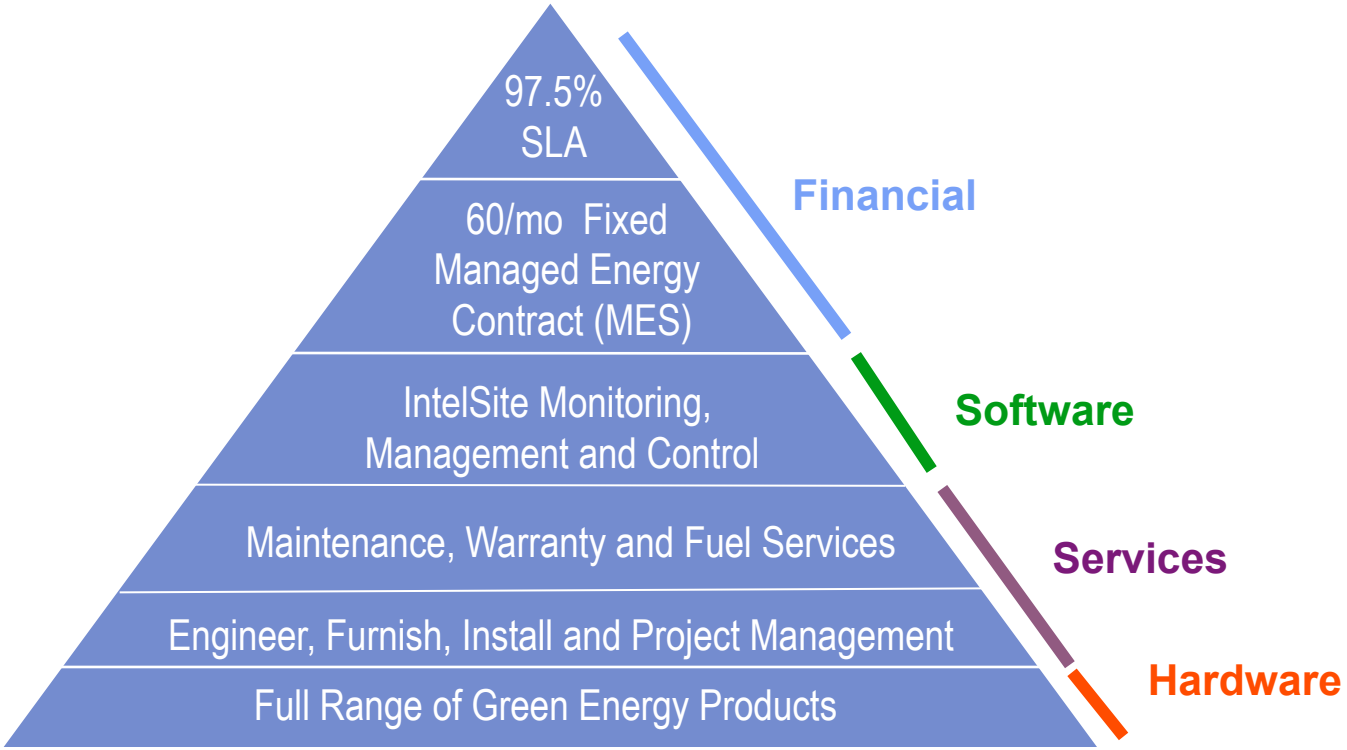


OFF GRID FULLY GREEN TRANSFORMATION



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Proven And Fully Integrated Product Offering



Cascadiant is leading the industry in making green power for mobile affordable and low risk by working with best-in-class suppliers and providing the leading service in the industry from proof of concept to full commercial deployment and long term support and maintenance

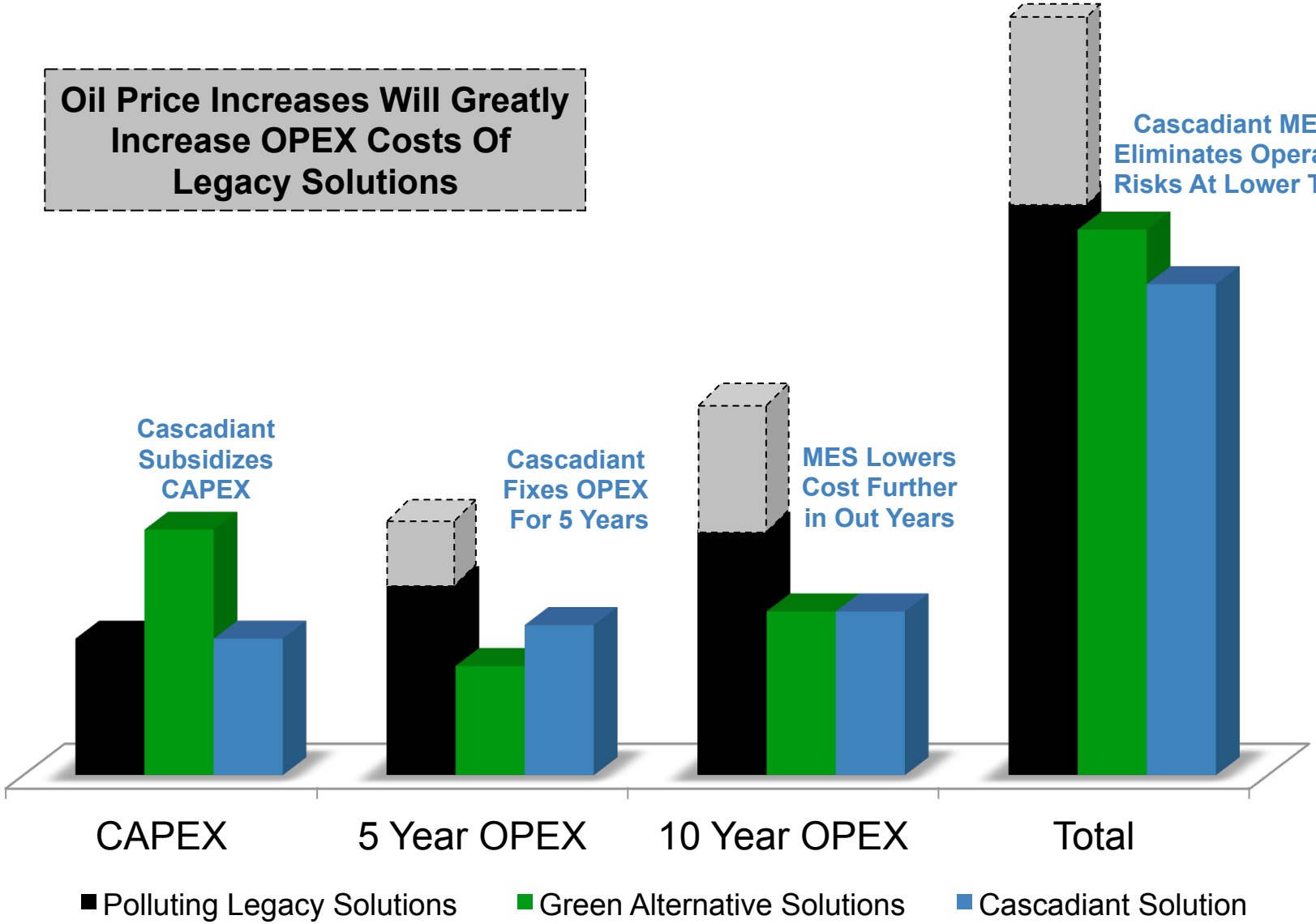
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Managed Energy Service (MES) Economics

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Challenges Of Going Green Solved With MES

Oil Price Increases Will Greatly Increase OPEX Costs Of Legacy Solutions



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Cascadiant Managed Energy Service

Cascadiant provides an integrated power solution using our Managed Energy Service (MES) with an upfront subsidized CAPEX and a fixed priced long term energy contract

- **MES Using Methanol Based Fuel Cells**
  - Long-term Fixed Energy Contract
  - Guaranteed availability and power levels
  - Service Level Agreement Guarantee and Key Performance Indicators
  - Network Operations Center (NOC)
  - Includes fuel and refueling services
- **Other Products and Services**
  - Advanced cooling systems that reduce site power consumption by more than 60%
  - Site monitoring solution that can reduce site outages by 75%
  - Ongoing maintenance services on all ancillary power products such as generators, HVAC and batteries
  - Managed Battery Service (MBS) using GE and A123 Batteries
  - Solar and Wind Products
- **All Products and Services Can Be Bundled Into A Single Financial Package With A Mixture Of CapEx and OpEx**

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MES Benefit Considerations

Superior Performance

- Fuel Cells offer a minimum guaranteed SLA of more than 97.5%
- Greater network availability directly results in increased site revenue and greater customer retention and satisfaction

Compelling Financials

- MES provides complete insulation against increases in world oil price
- and spikes in local diesel prices
- MES provides a labor inflation hedge by performing all aspects of power system maintenance for a flat and fixed 5 year energy contract

Environmentally Conscious Choice

- Fuel Cells are a vastly greener solution, using locally produce methanol that emits far less green house gas than diesel generators
- Fuel Cells virtually eliminate all SOx, NOx and particulate
- Fuel Cells run nearly silently eliminating community noise issues



MES PROVIDES ALL THE BENEFITS OF A CLEAN ENERGY SOLUTION AT AN EQUIVALENT OR LOWER OVERALL TCO OF THE ANTIQUATED AND ENVIRONMENTALLY DAMAGING SOLUTIONS BASED ON DIESEL GENERATORS AND VRLA's

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SUMMARY

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Cascadiant Sees A Greener Future for Indonesia

Performance To Date Needs Much Improvement

- President's vision, decrees, and statutes to date gone largely ignored
- Telco sector can lead the way to the President's vision of a greener future

Benefits of Going Green to Indonesian Operators

- Far better network performance
- Lower overall TCO for power and energy
- Increased revenue and customer satisfaction

Benefits Meeting President's Call For A Green Economy

- Decrease the flight of capital out of Indonesia and to foreign governments and companies and instead recycle local capital to build jobs in local communities
- Decrease oil consumption, lower power demand on an already stretched grid, and shrink the national carbon foot print
- Build a local methanol industry to service domestic fuel needs, create local jobs and grow to be a net exporter of green fuel throughout ASEAN
- Create a fuel cell and green battery industry through technology transfer enabling local manufacturers to create jobs and develop home grown solutions to meet domestic demand as well as future export requirements throughout ASEAN

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THANK YOU

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