



ANDHRA PRADESH
India's Sunrise State

POWERING

Andhra Pradesh

ENERGY INNOVATION SUMMIT 2018

28-29 November | VIJAYAWADA



Pitch COMPETITION



Dalberg



I. ABOUT THE SUMMIT

The Government of Andhra Pradesh is hosting 'Powering Andhra Pradesh' - a global energy innovation summit to shape the future of energy in Andhra Pradesh on **28-29 November 2018** in **Vijayawada, India**.

This will be a first of its kind summit in the energy sector in a developing country that will:

- ◆ **Go beyond the most common themes** by including themes across the entire energy value chain along with cross-cutting levers such as climate change
- ◆ **Focus on innovation** and showcase cutting edge technologies in the energy sector
- ◆ **Convene future-oriented voices** by bringing global experts, investors, incubators, startups under one roof
- ◆ **Focus on communicating actionably** by using a mix of formats that can help surface concrete recommendations

Andhra Pradesh has been at the forefront of the energy sector and has now set a challenging vision to transform its energy sector. To help achieve the state's vision for the energy sector, the summit will bring together energy experts from a wide range of organizations including private sector, international agencies, donors, investors, independent think tanks, research institutions and governments to share technology innovations and best practices for transforming the energy landscape. The summit will comprise of a mix of events aimed at sharing of knowledge and developing actionable recommendations, including:

- ◆ **Ideas Forum** where leading experts from a wide range of organizations share best practices, trends, and principles on innovations in energy through keynotes and panel discussions
- ◆ **Pitch Competition** where 'energy-preneurs' pitch innovations that can help Andhra Pradesh solve the emerging energy challenges and meet its demand, while making it more livable
- ◆ **Focused Workshops** (*invite only*) where targeted, collaborative sessions will be held that bring together experts and government representatives to ideate and design an actionable roadmap for the energy sector in Andhra Pradesh
- ◆ **Exhibition** showcasing leading and innovative products, services, technologies, designs and concepts in the energy space
- ◆ **Networking events and dinners**

II. PITCH COMPETITION - CALL FOR APPLICATIONS

Creation of a start-up ecosystem to foster entrepreneurship, technological innovation and employment creation is a top priority for the Andhra Pradesh government which has drawn up ambitious plans including setting up more than 5000 startups, over 100 incubators and accelerators and necessary infrastructure, forging partnerships and mobilizing 150M USD in venture capital by 2019. Recently, the state also committed to create a ~16M USD fund for early stage ventures.

Specifically in the energy sector, adequate, continuous and reliable power is an essential input for development and economic growth. Andhra Pradesh is among India's leading states on energy sector indicators including power availability, electrification and T&D losses. However, as the state grows rapidly, its energy sector would have to keep up with the demand. At the same time, diffusion of technological innovation and reform is essential to address current challenges and ensure high livability for citizens. Accordingly, the state government has set itself an ambitious energy sector vision.

Given this context, Andhra Pradesh is especially interested in innovative technology solutions that can help the state transform its vision into reality and is hosting a pitch competition to identify them.

The Pitch Competition at the summit is a flagship event, to:

- ◆ Identify cutting-edge innovations in the energy sector
- ◆ Provide a pathway to scale and impact for energy-preneurs

We invite applications for the Pitch Competition from innovative startups, social enterprises, and not-for-profits who can capitalize on their innovations and stand a chance to sign MoUs with the AP state government for further support and implementation of their solutions, secure seed funding, growth capital or grants, network with leading voices in the energy sector, get international visibility and also help the state government shape its energy agenda and policy.

The themes, proposition, eligibility and evaluation criteria, and key timelines are detailed in this note.

III. THEMES FOR THE PITCH COMPETITION

For the Pitch Competition, we are seeking solutions under the following themes:

<p>1 Conventional Power</p>  <p><i>Improving efficiency and reducing emissions of power plants</i></p>	<p>2 Renewable Energy</p>  <p><i>Harnessing new sources and enhancing efficacy of existing sources</i></p>	<p>3 Grid Upgradation</p>  <p><i>Futureproofing grids and strengthening sustainability of DISCOMs</i></p>	<p>4 Energy Efficiency</p>  <p><i>Installing smart appliances in personal and collective spaces</i></p>	<p>5 Mobility</p>  <p><i>Incentivizing electric vehicles' adoption through innovation</i></p>
<p>C. Emission reduction</p> <ul style="list-style-type: none"> • Cleaner fuel and combustion • Carbon capture and storage 	<p>C. Distributed generation</p> <ul style="list-style-type: none"> • Micro/mini grids • Roof top solar • Solar water pumps 	<p>B. Smart grids</p> <ul style="list-style-type: none"> • Load management • Smart metering • Virtual Power Plants 	<p>A. Smart appliances</p> <ul style="list-style-type: none"> • Intelligent appliances • Energy efficient lighting and appliances 	<p>A. EVs and batteries</p> <ul style="list-style-type: none"> • Electric vehicles (public, private) • Battery technologies
<p>D. Digitising power plants</p> <ul style="list-style-type: none"> • Operational efficiency • Increasing uptime and safety 		<p>D. Utility scale storage</p> <ul style="list-style-type: none"> • Thermal and Pumped hydro storage • Fuel cells 	<p>B. Efficiency in built spaces</p> <ul style="list-style-type: none"> • Smart lighting • Building energy management 	<p>B. EV infrastructure</p> <ul style="list-style-type: none"> • Charging stations • EV parking spaces

The type of solutions (non-exhaustive) we are looking for have been explained below.

Theme 1: Conventional Energy

(1) Emission reduction from conventional power stations

By all reliable projections, conventional power would continue to remain the mainstay of energy production despite significant emission related impacts such as on climate and health.

We are inviting technological and business solutions which can help existing and planned conventional power projects reduce emissions and conform to tightening climate related norms. This could include, for example, technologies such as co-firing in power plants, clean coal technologies such as coal gasification, carbon capture and storage (CCS), IOT tools for emission monitoring and control as well as business solutions such as those focusing on carbon credit markets.

(2) Digitizing power plants

Digital technologies are revolutionizing the way industries operate across the globe and have a huge potential for impact in power plants as well to improve overall operations.

We are inviting technological solutions which leverage digital technologies such as IoT, Artificial Intelligence and Machine Learning to help power plants improve overall operations, increase uptime and personnel safety such as by tracking asset health, fault prediction, improving machine control, connecting workforce with machines etc.

Theme 2: Renewable Energy

(1) Distributed Generation

Decentralized Renewable Energy (DRE) systems can make energy access and consumption more equitable, affordable and reliable for households as well as farmers, industries etc.

Thus, we are inviting technological as well as business solutions focused on design, installation and manufacture of innovative DRE systems or solutions which make such systems more accessible and affordable. This could include, solutions centered around smart solar water pumps, roof top solar, design and operation of mini and micro grids etc.

Theme 3: Grid Upgradation

(1) Smart Grids

Grid of the future will have to seamlessly incorporate conventional as well as renewable energy sources, distributed energy production and balance electricity supply and demand in real-time while ensuring minimal disruptions.

We invite solutions focused on making the electric grid smarter by leveraging digital technologies such as IoT, M2M communication, blockchain, big data analytics and AI for a wide range of applications including for load forecasting, dynamic load balancing, virtual power plants, monitoring energy flows, grid management etc.

(2) Utility Scale Energy Storage

Renewable energy is intermittent and variable by nature. Energy storage is essential to integrate renewables in the electricity grid on a large scale and increase their share in the energy mix.

We invite solutions focused on large scale, grid connected energy storage which can make the electric grid more resilient and at the same time can enable large scale renewable integration i.e. make the grid greener. This would include solutions such as Pumped Hydro Storage, Li-ion batteries, Liquid Air Energy Storage, novel batteries etc.

Theme 4: Energy Efficiency

(1) Smart Appliances

Advancement in digital technologies has the potential to make appliances we use every day at home smarter and more energy efficient, while simultaneously improving ease and quality of life for citizens.

We are specifically looking for technological solutions focusing on new smart appliances as well as add-on solutions which can make existing appliances smarter and help reduce the carbon impact of energy consumption. We also invite solutions focusing on behavior change to promote energy efficient behavior among users. This could include solutions such as smarter, efficient appliances, smart lighting, connected appliances, grid responsive appliances, usage analytics and gamification etc.

(2) Energy efficiency in built spaces

Buildings account for significant quantum of our energy consumption. Better design and construction along with improved energy management offers a huge potential for energy saving in built spaces.

We invite solutions targeted at improving energy efficiency in built spaces and reduce their carbon footprint such as building automation, efficient HVAC systems, advanced building insulation, solar thermal and geothermal cooling etc.

Theme 5: Mobility

(1) EVs and Batteries

Concerns around air quality and ever tightening vehicular emission norms, as well as lower operating costs are driving adoption of electric vehicles globally. There however remains a huge scope for innovation in electric vehicle technology.

We are inviting design, technological and other solutions that advance electric vehicles and battery technology to make them more affordable, accessible, address current challenges such as range and explore different use cases. This could broadly include EVs of different (like bikes, rickshaws, buses, cargo vehicles etc.), improved vehicle design, innovative battery technology, battery thermal management systems etc.

(2) EV infrastructure

Development of supporting infrastructure such as charging stations is a pre-requisite to large scale adoption of EVs and along with advancements in EVs is an equally important area of development.

We are inviting technological as well as business solutions focused on auxiliary and supporting infrastructure for EVs such as charging stations, parking spaces etc. This may include advanced and more efficient EV chargers, superchargers, smart EV chargers, innovative business models around vehicle charging and parkin etc.

IV. VALUE PROPOSITION FOR ENERGY-PRENEURS

A maximum of twelve energy-preneurs will be shortlisted for the finals to be held in Vijayawada from 28-29 November. Finalists will get the unique opportunity to:

- 1. Pitch solutions to eminent experts:** Finalists will get a chance to share their idea and receive valuable, real time feedback from thought leaders, experts, management professionals, decision makers in the government, and funders.
- 2. Sign MoUs with governments:** Finalists will have the opportunity to sign highly coveted MoUs with Government of Andhra Pradesh and its agencies (such as the New and Renewable Energy Development Corporation of Andhra Pradesh, state DISCOMs etc.) to pilot or roll-out their solutions.
- 3. Receive funding:** Finalists will have a chance to secure seed funding, growth capital, or grants from leading investors and donors. There will also be several cash awards on offer in individual categories.
- 4. Support Andhra Pradesh government in preparing an energy roadmap:** Finalists will also be a part of a high stakes workshop involving senior government, industry and civil society leaders to share their thoughts and experiences on pressing energy sector issues of the day and co-create with them an energy sector roadmap for the state to implement.
- 5. Network and get global recognition:** Finalists will get the opportunity to hear and connect with the global energy innovation community. The summit will also be covered by leading Indian and international media houses, lending high visibility to their ventures/ organizations.

V. ELIGIBILITY CRITERIA

To apply, participants must meet the following eligibility criteria:

1. The applicant must be a registered entity
2. The solution should map to at least one sub-theme
3. The solution should have been successfully piloted and should be beyond the proof- of- concept stage

VI. ASSESSMENT CRITERIA

Applications will be screened and assessed by a pre-jury comprising experts, funders, and academics to decide the finalists that will be invited to the Summit to pitch their solutions to an eminent jury comprising experts, funders, and government representatives. The assessment criteria for the stages will be as follows:

1. Value Proposition and innovativeness

- ◆ Is there a clearly defined problem statement mapped to the sub-themes that is being addressed?
- ◆ What is the potential for impact for the proposed solution?
- ◆ Has the product been tested in the market? Is a proof of concept ready?
- ◆ How differentiated is the applicant's solution from competition?

2. Scalable and sustainable model

- ◆ How scalable is the business and operating model?
- ◆ Is there a clear pathway to profitability or financial sustainability? (*this may not apply for not-for-profits that are seeking grants*)
- ◆ Is there a robust plan to mitigate key risks to the venture?

3. Team

- ◆ Does the organization leadership and management have relevant skills and experience?

VII. KEY TIMELINES

The key milestones for the Pitch Competition are:

- ◆ Online application opening: **9th Oct 2018**
- ◆ Online application deadline: **31st Oct 2018**
- ◆ Pitch by finalists at the Summit: **28th - 29th November 2018**
- ◆ Announcement of winners: **29th November 2018**

For more details visit us at www.andhraenergysummit.org
or for queries email us at pitch@andhraenergysummit.org

Agenda

Day 1 (November 28)	Day 2 (November 29)	
	8:30 – 9:45 am Breakfast with CM and experts (invitation only)	
	9:45 – 10:00 am Announcement of pitch-competition winners	
	10:00 am – 11:15 am Smart spaces and Energy efficiency Panel	10:00 - 12:00 am Workshop - Part 1 Generation, Transmission and Distribution - Themes 1, 2, 3 <i>(invitation only)</i>
10:30 am – 12:00 pm Inauguration and Opening Address by Hon'ble Chief Minister	11:30 am – 12:45 pm Riding Electric: Road to EVs Rapid fire panel discussion	
12:00 – 1:00 pm Address by key note speakers	12:45 – 1:45 pm Lunch and networking	
1:00 – 2:00 pm Lunch and networking		
2:00 – 3:15 pm Serving energy demand through renewables Panel	1:45 – 3:00 pm Innovations in Conventional Energy Panel	1:45 - 3:45 pm Workshop - Part 2 Consumption - Themes 4, 5 <i>(invitation only)</i>
3:30 – 4:30 pm Pitch competition - Part 1	3:45 – 4:45 pm Valedictory Address	
4:30 - 4:45 pm: Tea		
4:45 – 6:00 pm Grids of the future and DISCOM sustainability Panel	4:45 pm – 5:15 pm: Tea	
6:00 – 7:00 pm Pitch competition - Part 2		
7:00 pm onwards Dinner hosted by the Hon'ble Chief Minister <i>(invitation only)</i>		

- Pitch competition
- Panel discussion
- Workshop