02.10.2109

Letter of Interest Urban Living Lab on Sustainable and Smart Cities in India

Nordicflexhouse Technology India Private Limited hereby show their interest to be consultancy company and project management company for an Urban Living lab in India.

Nordicflexhouse Technology Innovation India Private Limited have been established in New Delhi to promote and construct affordable green buildings targeting the middle-class segment in India. The company is a WFOE company and 100% owned by Nordicflexhouse IVS in Copenhagen (Denmark). Nordicflexhouse IVS also have a WFOE company in Shanghai.

The Nordicflexhouse Technology Innovation India Private Limited entry strategy is to establish a reference green building project in New Delhi, as a two floor house to showcase an affordable sustainable smart building, constructed with prefab technique.

Nordicflexhouse are focusing on three business areas:

1. Project Management of green modular smart housing projects in Nordic, China and India
2. Project Management of future system solutions for smart sustainable urban city projects, like our living in light house in Copenhagen or Tiny house for urban living or Biopod solutions for urban farming or regen village or Tesla house in Oslo/Norway.
3. A Sino Nordic Incubation platform for Sino Nordic business development activities on Nordic, China and Indian market. We help Nordic green tech companies coming to India (technology transfer, joint venture, OEM, PPP) and Nordic companies being involved in Nordic housing projects. We are working within Smart home/smart city solution, Water/waste treatment, Air monitoring and purification, HVAC, Green building components, Green agriculture technologies & Healthcare technologies.

The Norwegian University of Science and Technology will support Nordicflexhouse and the Urban Living Lab on Sustainable and Smart Cities in India to:

- Work together with the Smart City SPVs and local stakeholders to identify short and long term goals and prepare a road map for goal achievement in the short and long term
- Map out potential arenas and ecosystems for urban innovation and prioritize selected arenas/sectors based on short and long term goals
- Co-create, test, implement, and qualify solutions;
- Create long-term commitment, trust and buy-in from a broad spectre of civic groups in the urban living lab, in order to achieve results that are successful in the long term;
- Select Key Performance Indicators and apply assessment methods for societal impact and value;
- Design and implement agile solutions that can be adjusted to local conditions and scaled up and replicated in Goa, other Indian cities and internationally;
- Manage cooperation between local and international partners and stakeholders.
- Facilitate dissemination of innovations and solutions to a global target group.
- Build capacity of staff at the SPVs to ensure sustainability of the innovation arenas

The urban living lab on sustainable and smart cities in India is expected to contribute to GOI's investments in addressing the challenges and realizing the potential of India's growing cities. The

objective of the Urban living lab on sustainable and smart cities in India is to have sustainable and liveable smart cities integrating global sustainable solutions.

The urban living lab on sustainable and smart cities in India aim to contribute towards the transformation in cities towards sustainable and liveable smart cities in India. The main changes that will need to take place is integration and local adaptation of global sustainable solutions in Indian smart cities; solutions in this context include both physical solutions as well as agile working methods and co-creation processes with local stakeholders. Nordicflexhouse will involve Nordic and Indian companies to be the value chain of establishing an Urban Living Lab in India. The Norwegian University of Science and Technology (NTNU) will qualify the selection and implementation of the innovations in the Urban Living Lab, support the co-creation processes with the city and its local stakeholders, and support the scaling up and replication of successful solutions.

The most important drivers for this change are the cities and their respective partners. The main assumption is that the GOI continuously will work in this direction through the 100 smart cities programme and similar programmes. The consultants' task is to implement output 1 to 3 including establishing of an urban living lab in Panaji, Goa. Furthermore, the consultant must undertake tasks that contribute to having sustainable and liveable smart cities integrating global sustainable solutions in India, and to undertake tasks that contribute towards the implementation of GOI's smart city programme covering 100 smart cities. The consultant must ensure that the urban living lab on sustainable and smart cities in India will be available for all smart cities in India. The consultant must be able to implement Output 1–3:

Output 1: Sustainable and liveable smart cities in India integrating global sustainable solutions through urban living lab on sustainable and smart cities in India;
Output 1.1: Sustainable and liveable smart cities in India integrating global sustainable solutions through Urban Living Lab in Panaji, Goa;
Output 2: Smooth delivery of smart city projects by urban local bodies/special purpose vehicles ensured;
Output 3: Global practices for sustainable cities' interventions in India.

The consultant will – among other things – be responsible for the following:
— project management,
— coordination with the Royal Danish Embassy, New Delhi,
— coordination with Imagine Panaji Smart City Development Ltd (IPSCDL), Panaji, Goa,
— progress reporting and financial reporting,
— preparation and reporting from meetings with parties,
— identification of potential opportunities for infrastructure projects,
— preparation of knowledge products for cities

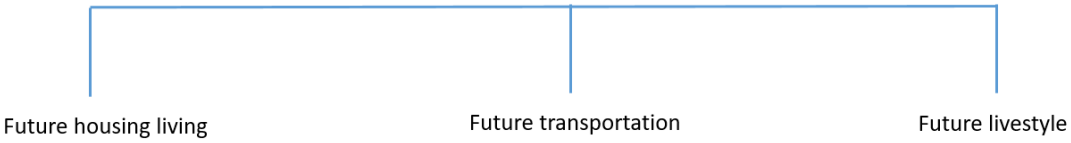
Nordic Smart Sustainable Living Lab in GOA India

The Nordic Smart Sustainable Living Lab will **Connect**, **Create** and **Innovate** Smart livable urban cities with leading edge sustainable solutions in a Nordic-Indian partnership, as shown in the figure below.

In particular, the Nordic Smart Sustainable Living Lab will address:

- Which innovative methods can help developing better, open and inclusive governance processes and structures for co-design and co-creation of people-centric, demand-driven smart city solutions in Goa and India;
- What is the added value of these methods, for co-design, co-creation and co-production of smart city solutions;
- What is the economic and non-economic value of the selected smart city solutions for distinctive stakeholder groups, and how can we assess their impact;
- How to integrate these elements in a consistent method for co-creation and decision support in the Goa urban living lab and beyond?

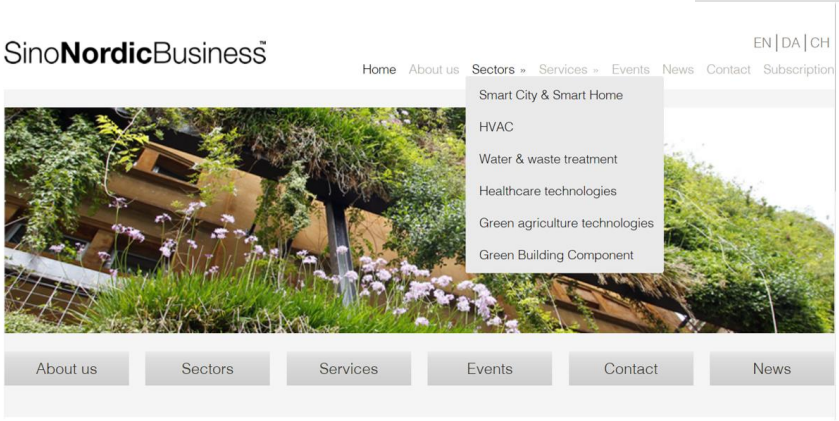
Tomorrows city



Student education *Define your concept for Indian market*	Nordic/national competition *Test your concept in a living lab*	VC funds *Invest in the competition program and sucessfull concepts*

April	July	Oct	Jan	April
Seeds (idear)	Living Lab	User Projects	TV show/movie	

Nordicflexhouse has already established a Sino Nordic Innovation Cluster (www.sinobusiness.dk), that we will extend to India and be the Innovation cluster for the Nordic living lab. This we will do in partnership with the Danish Embassy.



Sino Nordic Business Platform

The innovation cluster assists Nordic technology companies coming to India and demonstrate their solutions in the Nordic living lab. We are working with these sectors:

- Smart city and smart home
- HVAC (heating, Ventilation, Air Conditioning)
- Water & Waste treatment
- Healthcare technologies
- Green agriculture technologies
- Green prefab building component.

In addition to these sector-based companies, we will expand the cluster with social entrepreneurship companies to deliver the citizen participation and urban governance solutions that are needed to integrate sectoral solutions into high quality of life. Collaboration with NTNU (our academic partner) will further expand our portfolio of sectors and technologies that could be adapted, tested and developed in Goa and India.

Sustainable Concept Development Workshop and Competition for the City of Tomorrow

As part of the project, we will organize a sustainable concept development workshop and open competition for the “City of Tomorrow”, as described in more detail below:

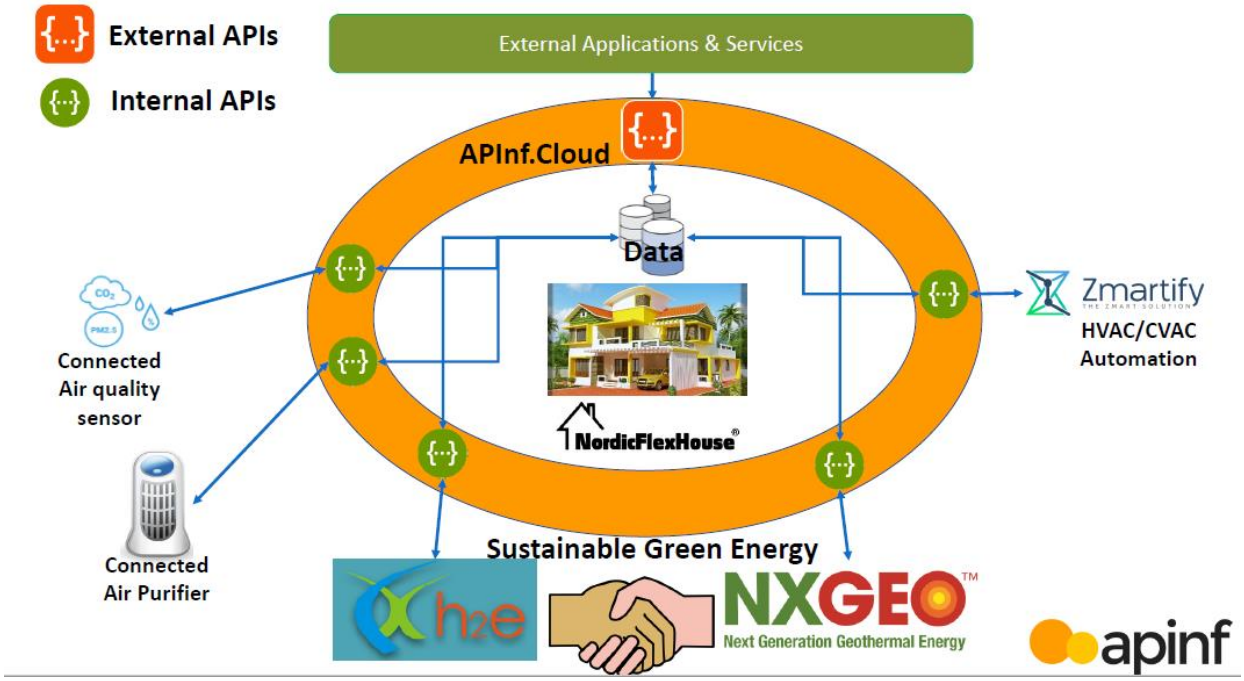
The workshop will aim to create future sustainable and affordable housing concepts for the Indian market. Nordic and Indian companies will be invited to participate in the workshop.

We will organize a start-up competition for Nordic companies where they will be selected to be part of the Goa Urban Living Lab to demonstrate and localize their solution to Indian market conditions and needs.

Nordicflexhouse will assist Nordic technology solutions to come to India for localization of their green solutions in Indian market conditions, and to find local partners for joint venture business collaboration.

The Nordic Smart Sustainable Living Lab will be built flexible, so that we can change some of the green technologies to other green solutions and test them in a Living—Working or Living – Life environment.

We will create an open urban smart city platform, as illustrated in the in the figure below.



We will work closely with the Norwegian University of Science and Technology (NTNU) to develop a Capacity Building platform in creating tomorrow Nordic Smart Sustainable Living Lab in Goa India.

Platform for Capacity Building – based on an uncertainty framework in urban planning

	KNOWN GOALS	UNKNOWN GOALS
KNOWN MEANS	Classroom training Technology transfer	Visioning Scenario building Technology matching
UNKNOWN MEANS	Piloting Innovation procurement Scenario building	Experimentation «Roadshow» Urban Labs Innovation procurement

Rolee Aranya, Professor and Vice Dean, NTNU rolee.aranya@ntnu.no NTNU

The Capacity Building Platform will:

- Help shape local ecosystems of partners and stakeholders from research organizations, municipalities, citizens, and companies;
- Ensure that innovative outcomes are fed back into practice;
- Create a portfolio of qualified methods and tools that support co-creation of local solutions by private and public sector, research, citizens and other stakeholders, throughout the entire transformation process from visioning to anchoring, planning, piloting, improving, implementing, managing, scaling up and replicating;
- Disseminate the results into national and international networks to create indirect impact;
- Unlock markets for smart city solutions developed and produced in cooperation between Nordic and Indian partners, and tested in the Goa Urban Living Lab;
- In order to speed up the learning process across the entire value chain, we will develop education and training programmes with knowledge and experiences generated in the Goa Urban Living Lab.

Best Regard.

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