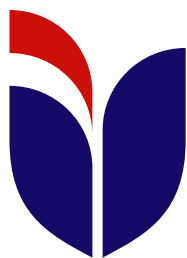


Business through Alliance & Friendship



BRITISH CHAMBER OF
COMMERCE IN DENMARK

SMART CONSORTIUM
INDIA MISSION REPORT

Author:	Mariano A. Davies, President & CEO
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MISSION REPORT

Preamble

The British Chamber of Commerce in Denmark (BCCD) is a member of the British Chamber Global network. British Chambers are the oldest commercial brand with a very high level of recognition for quality and seriousness that attracts wide representation of the business community internationally.

BCCD with the assistance of GSS Consulting Group and Mr. Durga Prasad arranged a scoping trade mission to India, which took place in the period 21-29 August 2016.

Mariano A. Davies	President & CEO	British Chamber of Commerce in Denmark
Gursham S. Sekhon	CEO	GSS Consulting Group
U.V. Durga Prasad	General Manager	Krishnapatnam Port
Karol Marcinkowski	Founder	Niras
Kasper D. Mikkelsen	Director	CLEAN Cluster
Jimmy B. Andersen	CEO	LINX
Umesh Chandra Singh	Group VP & CEO	Hempel, India
Felix Spender	Senior Partner	North Light Solutions
Henrik Strauss	CEO	HenrikStraussDesign
Lars Nørholt	CEO	Hesalight
Alan Bentley	CEO	IPM Global Mobility
Mike Livesey	CEO	Anglo-India Renewables

Krishnapatnam Port

The first destination for the Smart Consortium was M/s Krishnapatnam Port Company LTD, which is a Group Company under M/s Navayuga Engineering Company LTD.

The three vehicle Consortium cortège was escorted from the main road to a formal military parade welcome, a tree planting ceremony, an executive lunch and an afternoon meeting at which presentations were made by all parties.



The British Chamber Consortium officially welcomed by Krishnapatnam Port Authority.



An overview of the growing activities of Krishnapatnam Port can be seen on its corporate website: www.krishnapatnamport.com and Navayuga Engineering Group on www.nec Ltd.com.

- **M/s Machilipatnam Port Company** - With regard to Port Development, this is a new port development project already strategically discussed and ready to commence once appropriate finance has been found. This development will take place next year.
- **New Port Dredging** – Kristnapatnam Port has six dredgers constantly in use and would be interested in finding a joint venture partner using the latest methods for such a task.
- **Navayuga Engineering Group** – this company would be very interested in partnering with one or more “smart” engineering and construction companies for various new PPP projects to which they have access.



Members of the Consortium delegation took part in a tree planting ceremony.

The British Chamber will also seek to establish contact between Green Port Hull, Associated British Ports and the fast developing Kristnapatnam Port.

Andhra Pradesh Regional Government Ministers

The Consortium delegates had an opportunity on the first day at the Gateway Hotel in Vijayawada to hear the Andhra Pradesh vision and strategy for the development of a new regional capital near to Vijayawada from brown field to showcase smart city. These individual presentations allowed for an exchange of ideas and set a basis for the Consortium to make relevant presentations the next day to a number of Regional Government Ministers.

It was soon very clear that the Consortium's proposal that a shared knowledge approach, where pilot projects secure the right solution, met with approval and the following plan of action was suggested by the smart city project hosts:

- 1) *A direct MOU with CLEAN is signed to speed up the collaboration. If the AP Smart City Planning Group gets positive feed-back, CLEAN will get its board of relevant companies,*



universities and cities (including Copenhagen) ready for an MOU with Amaravati/ Andhra Pradesh. Once first results are evident, Parties could move to the next level of an MOU.

- 2) In parallel, AP Smart City Planning Group will send more detailed information of all the challenges that have been agreed as primary focus:
- **Governmental Complex** Holistic planning approach, which enables show casing of the very best practices, where synergies are harvested. Model and pilot for the rest of the new city.
 - **Water** All aspects - resource mapping, water supply, water leakage and management, efficient water use, waste water treatment and conversion to energy and manure.
 - **Smart Mobility Planning** with special focus on bike culture and relevant infrastructure.



Consortium morning conference in Vijayawada with Regional Government Secretaries.

The wiki link actually provides a lot of valuable information including the Copenhagen cycle tracks https://en.wikipedia.org/wiki/Cycling_in_Copenhagen . Copenhagen is now putting in all its second generation bike lanes, which are 3-4 meters wide (instead of the old 1,7–2,2 meter lanes). This should be considered in order to get the infrastructure right from the beginning.

After a number of meetings with the Government of India in New Delhi, the Consortium wrote the following letter to our Regional Government Smart City Project Hosts in Andhra Pradesh:

Our Consortium shares the view that the State of Andhra Pradesh holds all the elements for a long-term collaboration and that Andhra Pradesh will be main focus for engagement in India.

This view was corroborated by our meetings in New Delhi with the Honorable Minister of Urban Development, Hon. Mr. Venkaiah Naidu, and the Hon. Minister of Science & Technology and Earth Sciences, Mr. Y S Chowdary. The Minister of Science & Technology suggested, that our Group put forward a couple of concrete proposals for collaboration and also suggested that we set-up a joint Indo-Danish Educational Hub in the new Science City of Amaravati. Mr. Jimmy



Binderup Andersen from Linx is currently engaging with the three Danish top universities for this purpose: Aarhus, Copenhagen and the Technical University of Denmark.

The Urban Development Minister emphasized their ambitious 100 Smart Cities Programme and also kindly offered to support the Consortium in engaging with the cities. As two of the twenty “first selection cities” are in Andhra Pradesh (Visakhapatnam and Kakinada), it would definitely be of interest for the Consortium to engage in the development plans for these cities.

As you know, the Consortium is already in contact with the APCRDA regarding formats for our collaboration in the new capital city Amaravati and we very much look forward to proceeding and believe there is a solid basis for long term collaboration.



The consortium thanked Mr. Krishna Kishore, CEO of AP Economic Development Board.

In our evaluation, we also concluded that the Consortium could contribute to the development of Andhra Pradesh with identified key competencies within the water sector in general, energy and water efficient new buildings.

Thus to give you an overview of the Consortium’s interest in areas to proceed, they can be summarized as follows;

- **Amaravati CONSORTIUM-APCRDA Partnership** with an aim to setting up an “Amaravati Desk” and initiate a joint action group between a consortium of Danish firms on specific areas of collaboration through a proposed “Amaravati Planning Design & Research Institute”. This would initiate action right from the design stage to an overall project lifecycle partnership (in progress with CLEAN).
- **Joint Indo-Danish Educational Hub** in the new Science City of Amaravati (in progress).
- **Smart Cities Programme** cities of Visakhapatnam and Kakinada. Consortium companies could possibly engage in the planning and design phase. (We request suggested next steps for identifying first projects).
- **Water Sector** in Andhra Pradesh in general. All aspects: Holistic integrated water planning, feasibility studies, resource mapping, water supply, water leakage management, efficient water use, waste water treatment, conversion to energy and



manure. (Similarly, we request suggested next steps for identifying first projects. A first project could, for example, be initial feasibility studies of possible solutions to a city's challenge within water supply or waste water treatment or concrete projects that are already in the pipeline – such as a water leakage management system or a waste water treatment plant).

- **Energy and Water Efficient Buildings.** Possibly a first project - planning and designing of a new Police Headquarters in Vijayawada (please suggest next steps).

For all points of engagement, we wish to identify concrete pilot projects to get the best possible start at our collaboration and would therefore like to start the dialogue with relevant agencies to carve out the most obvious first projects. Once we have identified possible projects, We have a number of concrete questions that we would like to put forward. This is just to have the best possible information to present to the Consortium companies. This is particularly the case for the water sector, where we have the option of CLEAN setting up a board of triple helix players, who will evaluate each project with the aim of building the best possible consortia for each case.

As you know, we value a close dialogue in defining the scope of the projects in order to ensure, that the full scope of possible solutions can come into play. One way of identifying the projects could therefore also be to simply present the most evident challenges you face, such as within the water sector in a defined geography and use that as a starting point. We sometimes refer to that as a co-creation process, where all the best ideas are put on the table in order to define the problem and possible solutions.

Chief Minister, Andhra Pradesh

The Consortium had a constructive meeting with the Chief Minister, who suggested proceeding with our collaboration by formulating a sister City/State MoU with a suitable Danish city. The CM Office is investigating whether a first MoU could be signed with CLEAN, so that initiating interactions and projects is not slowed down. CLEAN will investigate which Danish city and utility is best suited to support the companies and joint Research Centre.



Consortium together with the Chief Minister, Mr. Nara Chandrababu Naidu, Andhra Pradesh

With regard to Amaravati (new capitol city), three initial cooperation tracks were identified:

- **Livable City** - special focus on smart mobility, particularly bike infrastructure and culture.
- **Design, Engineering and Construction** - initially the iconic Government District of the new capitol city with a special focus on integration of sustainable best practice.
- **Water.** All aspects: Holistic integrated water planning, resource mapping, water supply, water leakage management, efficient water use, waste water treatment and conversion to energy and manure.



The consortium meets with the Chief Minister, Andhra Pradesh.

Local and international companies have been invited to various workshops in energy and water in the middle September. Consortium CLEAN companies have been invited to participate. These workshops can possibly be adjusted to accommodate a CLEAN delegation.

Wider Andhra Pradesh

- **Water.** All aspects Holistic integrated water planning. resource mapping, water supply, water leakage management, efficient water use, waste water treatment and conversion to energy and manure.
- **Cruise Ship Hotel** – The Andhra Pradesh Secretary for Industries & Commerce asked us to look into the availability of a cruise ship as a 2.000-3.000 bed hotel for a celebration at one of AP's ports in 2017. Mr. J. Krishna Kishore, CEO of Andhra Pradesh Economic Development Board, will send the British Chamber an official request.

Vijayawada

- **New Police Headquarters.** This is possibly a fast track project, where a number of best practice integrated sustainability measures can be integrated. The British Chamber has been asked to invite an internationally renowned architect to join our Smart Consortium.

Meeting with CII (Confederation of Indian Industry)

In Vijayawada, Mr. Mariano A. Davies met with six CII Executives, who are all leaders of industry in Andhra Pradesh with projects throughout India, and who all have an interest in looking into Joint Venture collaboration with European companies that are either able to bring new technology and knowledge to their business model in India or act as a bridge for export.

Mr. Mariano A. Davies met with the following CII Executives:

- **Confederation of Indian Industry (Southern Region)** – Mr. Mariano A. Davies, Mr. Durga Prasad and Mr. G.S. Sekhon met with the CEO, Mr. P. Chandan Patnaik, who is interested in anything that brings better production and increases the value chain in areas such as: greentech, cleantech, infrastructure development, smart city and much more. He is very keen to start a dialogue with the British Chamber. Mr. Davies also met with CII Chairman of Young Indians in Business, Mr. D. Anvesh, who is also an Executive Manager in Efftronics.
- **AP Chambers of Commerce, General Secretary** – This organisation is the southern arm of CII. They also met with the General Secretary, Mr. Potluri Bhaskara Rao. They are keen to work with the British Chamber to bring companies to India that can assist as



JV Business Partners in a variety of projects throughout India. There would also be interest in bringing investment capital to some of these PPP projects. He is very open to start a dialogue with the British Chamber.

- **Vijay Nirman Company PVT LTD** – this is a successful engineering and construction company with major projects all over India. Mr. Davies met with the General Manager, Mr. V.A. Venugopal, who would be very interested in JV Business Partnerships for most large construction projects. They have a very large, well-educated and versatile work force, which allows them to carry out smart engineering and other construction projects. They have a healthy funnel of projects throughout India.
- **GEV** – Mr. Davies met with the CEO, Mr. Venkat Veeramachaneni. This company builds smart residential apartment blocks and luxury housing. Its engineering and construction work is carried out by Vijay Nirman. They are very interested in partnerships with companies from Europe that can offer best practice in smart design, smart construction, green energy and the like. For now, they only work in Andhra Pradesh but have a very healthy funnel of projects.
- **Efftronics** – Mr. Davies met with the CEO, Mr. D. Rama Krishna. This is a huge company and market leader in India in areas of electronics within the railway sector and a growing player in smart city projects. They are open to JV Business Partnerships.
- **Malaxmi & Sentosa Group** – Mr. Davies met with the CEO, Mr. Sandeep Mandava. This is a very powerful group with a wide range of projects. One of the projects on their table is to build an international school, for which they are looking for a strong technology partner in all matters green and in respect to engineering requirements. They are also about to kick start a project to build environmentally correct and affordable residency. URGENT! Project may start in October.

Minister of Urban Development, Government of India

The Consortium met with the Minister of Urban Development, Housing, Urban Poverty Alleviation and Information & Broadcasting, Mr. M. Venkaiah Naidu. The following issues were discussed:

- The Minister set out his views on Smart City development
 - o He emphasised the importance of vision and framework.
 - o He expressing his views on their progress with poverty alleviation.
 - o He pointed out that Smart City development is carried out by each State with support from the Central Government of India.
 - o Finally, he emphasised that the regional Government of Andhra Pradesh has a visionary approach and will be a good starting point for Consortium cooperation.
- The Consortium delegation emphasised the strengths of its concept:
 - o The corner stones of the Consortium's smart solutions are:
 - Sustainability
 - Innovation
 - Design
 - o Liveability – placing people at the centre of solutions.
 - o The Danish concept of a triple helix (private, government, universities) model has created significant results for Smart City developments.
 - o Achieving results through local engagement and cooperation.
 - o Transfer of skills, technology and knowledge.
 - o Incremental and iterative progress through pilot projects and proof of concept.



- Scalability secured and expansion planned via local partners.

- **Conclusion:**

- The Consortium delegation continues to be very positive towards all potential initiatives and projects through a knowledge bridge to India.
- Andhra Pradesh Smart City activities will be prioritised as an entry point.
- Focus areas will be identified and opportunities will be addressed.
- Interaction will take place with the local responsible officials with escalation possibilities at both local and national Government level.



The Consortium met with India's Minister for Urban Development.

The Minister closed the meeting by expressing his interest in future collaboration and directed the Consortium delegation to engage with his team.

Minister of Science & Technology, Government of India

After a very constructive meeting in the Minister's Office with the Minister, Mr. K. Balaji Majumdar, the Consortium was asked to take the next steps with Dr. Krishnarao Appasani, who is the Vice Chairman and CEO of the Science City of Andhra Pradesh and an Advisor to the Minister of Science & Technology.



The Consortium met with India's Minister for Science & Technology.

Dr. Appasani wrote to each member of the Smart Consortium the very next day:

Subject: *Your Presentation on August 26 in the Office of Honourable Minister for Earth Sciences and Science & Technology*

Dear All,

It was pleasure in meeting you all and taking time to present various projects that Danish companies would like to contribute for the development in India and the state of Andhra Pradesh.

Though, you have many projects in mind, as the Honourable Minister pointed out that the present pipeline model in his governance is: Idea to Innovation to Incubation and Commercialization. As Honourable Minister also suggested that you should identify some prominent and potential key technology platforms that can be easily implemented in Indian States.

In this context, he suggested you to prepare a proposal and send it to my attention. So the Honourable Minister will review with his Science secretaries and make appropriate decisions.

As you mentioned that you all met Honourable CM of the Andhra Pradesh and presented your delegation. Being am responsible for developing the Science City in the Smart Capital city of Amaravati your input, some initial design, collaboration with Danish Universities (such as the University of Copenhagen, Technical University of Denmark, Aarhus University) will be ideal; those will be discussed in the follow up meetings.

*Denmark should develop a **'Indo-Danish Educational Hub'** in our Science City in Amaravati, besides the possible consideration and implementation of other technology projects in various states of India.*



Look forward to hear from you at your convenience.

Have a nice time in India.

Dr. Appasani

On behalf of the Smart Consortium and in reply to Dr. Appasani, Mr. Jimmy Binderup Andersen sent following reply mail:

Dear Dr. Krishnarao Appasani

Thank you so much for your prompt and very positive mail. We are all extremely pleased and motivated by your and the Honourable Minister's view to collaboration and your suggestion to present project proposals within the mentioned priorities of Innovation, Incubation and Commercialisation

Furthermore, you have completely sold to us the concept of an "Indo-Danish Educational Hub" in the Science City of Amaravati! Our only comment is that we should not wait for the Science City to be built, but start ASAP on an incremental cooperation. Also in the preparation, there could be some mutually beneficial technology and experience exchanges, both on the do's and don'ts side.

Out of the delegation, we will coordinate the activities and I hope we can have a close dialogue in order to move in the right direction and at the right pace. As the three aforementioned universities are already involved with the LINX project, I will immediately brief them on our thoughts and offer to visit each one of them to scope both the individual and joint areas of competence and interest.

On a personal note, I was delighted to find such a competent and knowledgeable expert as executer and advisor to the Honourable Minister and your presence will definitely motivate and encourage academia in Denmark. I hope we together can define the niches of our Indo-Danish relationship and strive for world-class within them.

On behalf of the whole delegation, please relay our most sincere and heartfelt appreciation and motivation to the Honourable Minister.

Director General, Central Reserve Police Force, India

A meeting was held with Mr. K. Durga Prasad, Director General of the Central Reserve Police Force, and the discussions included the following:

General introduction of the participants through Mr. Mariano A. Davies and Mr. K. Durga Prasad.

Mr. K. Durga Prasad set out his areas of responsibility and challenges that he sees:

- There are riot problems in the Kashmir region and Mr. K. Durga Prasad seeks means to reduce and control the rioting acts in the region.
- Approx. 95% of the population are peaceful but some 5% react violently.
- It was emphasised that means should be non-lethal and Mr. K. Durga Prasad wished to learn the knowledge and experience of the participants.
- Mr. K. Durga Prasad addressed technology capable of supporting his staff on the often dangerous missions.
- For remote areas, Mr. K. Durga Prasad requested possible support for their infrastructure development like roads and camps.



The Consortium met with the Director General of the Central Reserve Police Force.

In response, the Consortium delegation touched upon different solution models:

- **Non-lethal Measures**

- For rooms and vehicles, we suggested considering fog cannons, which can be triggered manually or by alarm systems.
- We also recommended considering the security threat holistically and suggested a broad PR campaign involving social, cultural, educational and other similar activities.
- Tailored optical surveillance through photos and video could be a solution for both preventive and post-crisis activities.

- **Surveillance Technology**

- We also recommended considering drones in the surveillance concept at an operational, tactical and strategic level. This could help with possible early preventive measures such as dumping non-lethal gasses and for mapping of riot groups positions and movement.
- Possibilities of using helmet or body mounted HDMI cameras was also discussed, where recognition software could ease and help identification.

- **Deployable Solutions**

- Clean tech options were presented as support solutions for any deployed staff. There are several possibilities of water and waste management.
- Completely deployable camps were also discussed, where separate containers can be deployed with different functions in the camp according to the surrounding and role of the camp.



- Examples of alternative road building abilities were also discussed, where certain surface compound enable different solutions. Depending on the requirements, artificial turf with sand fixing can also be considered.

- **Conclusion:**

- Very good and fruitful discussions were held, where ideas were bounced between the Consortium delegates and the host.
- Some of the suggestions are already addressed but there are still clear options for some level of cooperation.
- Further discussions will be conducted between the Parties in an attempt to define areas of mutual interest for engagement.

The host, Mr. K. Durga Prasad, closed the meeting by expressing interest in future collaboration and directed the Consortium delegation to engage with his team.

Report Conclusions

The Smart Consortium seems to have made a very positive impression at the various meetings at Krishnapatnam Port and Vijayawada in Andhra Pradesh and New Delhi. The most important of all these meetings (chronologically - as they took place) were with:

- Krishnapatnam Port Management Team
- Andhra Pradesh Smart City Project Team
- Andhra Pradesh Economic Development Board & Government Secretaries
- Chief Minister, Andhra Pradesh
- Confederation Indian Industry, Southern Region
- Andhra Pradesh Chambers of Commerce and Industry Federation
- Minister of Urban Development, Government of India
- Minister of State for Science & Technology
- Director General CRPF (Central Reserve Police Force)

The Consortium has been in dialogue with relevant authorities in relation to the following:

- Smart City Development
- Port Development
- Infrastructure (Road and Rail)
- Construction
- Waste Management
- Water

The Consortium and the various Indian Government hosts agreed that the way forward with many of the bigger projects would be to define joint venture pilot projects that focus on:

- Sustainability
- Innovation
- Design



The British Chamber will seek to define and develop the Smart Consortium to include additional specific companies that add value to the existing Smart Consortium and to meet the needs of the specific projects as they are defined.

A number of projects have already been defined and will need to be followed up once the British Chamber has received specific project instructions from the relevant authorities in India.

Date: 13 September 2016

Mariano A. Davies
President & CEO

British Chamber of Commerce in Denmark

