

Science Express Climate Action Special (SECAS II)

Brief Note

Science Express is a flagship programme of the Dept. of Science & Technology (DST), Govt. of India. It is an innovative mobile science exhibition mounted on a 16 coach AC train, traveling across India since October 2007. Since then, it has made nine tours of the country, traveling about 160,000 km and exhibiting at 520 locations. Over its 1,780 exhibition days till date, Science Express received an overwhelming response with over 1.76 crore visitors. Science Express has thus become the largest, the longest running and the most visited mobile science exhibition and has twelve entries in the Limca Book of Records. In the current, ninth phase of its journey, Science Express created another record with 1.24 lakh people visiting the exhibition train in a single day at Mumbai CST station on 22 July 2017.

Science Express Phase I to IV showcased cutting-edge research in Science and Technology being carried out worldwide. Phase V to VII was based on the theme of biodiversity and as 'Science Express Biodiversity Special (SEBS)', it showcased the rich biodiversity of India and its conservation measures. Phase VIII as 'Science Express Climate Action Special (SECAS)' highlighted the global challenge of climate change.

The ongoing ninth phase of the Science Express as SECAS II was flagged off on 17 Feb 2017 from Delhi Safdarjung Railway Station by Shri Suresh Prabhu, Hon'ble Minister of Railways; Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology and Earth Sciences; and Late Shri Anil Madhav Dave, the then Hon'ble Minister of State (I/C) for Environment, Forest and Climate Change, Govt. of India. The current tour of SECAS is scheduled from 17 Feb to 8 Sept 2017, during which it is being exhibited at 74 stations across India, covering 19000 km. SECAS is focusing on Climate Change, and Science & Technology. The exhibition conveys message about Climate Change and is also a good opportunity to generate dialogue and discussion.

SECAS II is a unique collaboration between the Dept. of Science & Technology (DST), Ministry of Environment, Forest & Climate Change (MoEFCC), Dept. of Biotechnology (DBT), Ministry of Railways, Govt of India; Wildlife Institute of India (WII) and Vikram A Sarabhai Community Science Centre (VASCSC).

Climate Change is an important environmental issue, with many short term and long term impacts. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are not just global in scope and unprecedented in scale but they also more severely affect the poor and marginalized people. However, there is very little understanding about climate change and its impacts. The state-of-the-art exhibition on board the SECAS aims to create awareness among various sections of society as to how climate change can be combated through mitigation and adaptation.

The Paris Agreement entered into force on 4 Nov 2016. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change and to strengthen the

ability of countries to deal with the impacts of climate change. The first session of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement took place in Marrakech in November 2016. The Conference successfully demonstrated to the world that the implementation of the Paris Agreement is underway and the constructive spirit of multilateral cooperation on climate change continues.

Science Express, redesigned as SECAS, intends to contribute towards increasing understanding of the science of climate change, the observed and anticipated impacts, and different possible responses. The previous 3 phases of Science Express were rolled out as a joint initiative of DST and MoEFCC as *Biodiversity Special* and showcased the myriad biodiversity of India. Thus it was rational to shift the focus to the theme 'Climate Change' as it will affect the biodiversity of not just India but the entire globe as well.

Of the 16 coaches of SECAS, exhibition in 8 coaches put up by MoEFCC, is exclusively devoted to information, case studies and material related to various aspect of Climate change, the underlying science, impacts, adaptation activities, mitigation solutions and policy approaches in a manner that is easy to understand and interesting for not just school students but also the masses. In rest of the rake, there are exhibits and activities put up by DBT and DST.

The broad themes covered in the coaches are as follows:

- Coach 1: Understanding Climate Change - Insights in the climate as a system, the greenhouse gas effect and the underlying reasons for climate change with key message that the current change in the climate is due to human activities.
- Coach 2: Impact of Climate Change - How temperature rise, monsoon variations, sea level rise are predicted to affect vital sectors like water, agriculture, forests and biodiversity, and human health and ways to reduce these.
- Coach 3 & 4: Adaptation - Concepts of adaptation and examples from day to day life, adaptation strategies and stories from field. Adaptation options in urban and rural contexts and the adaptation actions India is taking.
- Coach 5 & 6: Mitigation - Concept and definition with examples, emphasis on restoring balance, enhancing sinks and reducing emission through Renewable Energy (RE) technologies. Various programmes implemented by India and low carbon strategies and ambitious goal to increase RE footprint.
- Coach 7: International Negotiations for Climate Change - Introduction to UNFCCC, IPCC and internationally agreed action & targets. Explaining concept of equity and common but differential responsibility, Kyoto protocol & other key outcomes of major COP, Paris Agreement, etc.
- Coach 8: Positive Actions - What can one do at school, on roads, at home and in offices and focus on concept of lifestyle choices with the key message 'Increase your Handprint, Decrease your Footprint'.
- Coach 9 & 10: Exhibition put up by the Department of Biotechnology (DBT), Govt of India, covering themes like Biotechnology for bio-resources and nature conservation with emphasis on Tiger Conservation and Chemical Ecology and India's research and development initiatives in field of Biotechnology.

- Coach 11: Exhibition put up by the National Innovation Foundation (NIF) showcasing select innovations, demonstrating the ingenuity of common people and an innovative project which uses augmented reality techniques. Also, exhibition on themes like Innovations in S&T, Science Education, Technological solutions for societal development, etc.
- Coach 12: A Kids Zone is set up for children from Std. 5 and below to participate in fun-filled activities, games and puzzles in science, mathematics and environment.
- Coach 13: The Joy of Science (JOS) Hands-on Lab in this coach is a space where students from Std. 6-10 can perform experiments and activities to understand concepts in environment, science and mathematics in an interesting manner. A training facility is also set up for orientation of teachers here.
- Solar panels have been installed on the rooftop of Science Express coaches 11-13, as a collaborative effort of DST and CEL, for harnessing solar energy.

At each halt of SECAS, activities are planned to engage visitors across different age groups to reinforce its message. An exciting and much sought-after Outreach Programme is also conducted in local schools/institutions along with activities on the railway platforms. In addition, informative take-away material is made available for wider distribution amongst schools and visitors.

DST has entrusted Vikram A Sarabhai Community Science Centre (VASCSC), Ahmedabad with the task of managing the SECAS across India. VASCSC's team of qualified, trained and highly motivated Science Communicators travelling with the train explain and interpret the exhibition, answers queries, facilitate the visitors and conduct complementary activities.

The exhibition is open to all but primarily targets students and teachers. More information is available on the website www.scienceexpress.in. For visit to the exhibition or any queries, please send an email to scienceexpress@gmail.com or contact the team aboard the train on 09428405407. School students can participate in the JOS Lab in small batches of up to 20 students, by prior registration. Team-SECAS solicits cooperation from all the concerned departments, media, institutions and individuals in giving wider publicity to this prestigious exhibition-on-wheels, so that a large number of visitors are benefited.

Please Note

- The exhibition is open to all.
- There is no entry fee for visiting the exhibition.
- Not allowed on the Science Express: Items like mobiles, cameras, bags, match-boxes, cigarettes, beedis, tobacco, water bottles, any liquid, and any sharp/ pointed objects.
- Venue: Railway station of the respective city
- Timing: 10:00 am to 5:00 pm
- Refer schedule for the dates at respective halts.

Science Express Climate Action Special (SECAS II)

Schedule

17 February - 8 September 2017

| Sr. No. | Station | Exhibition Dates | Sr. No. | Station | Exhibition Dates |
|---------|-----------------------------|----------------------|---------|---------------------|----------------------|
| 1 | Delhi Safdarjung(Flag off) | 17 Feb 2017 | 38 | Gulberga | 31 May - 2 Jun 2017 |
| 2 | Delhi Cantt | 18 - 19 Feb 2017 | 39 | Kalluru | 03 - 05 Jun 2017 |
| 3 | Hisar | 20 - 23 Feb 2017 | 40 | Whitefield | 06 - 08 Jun 2017 |
| 4 | Dhuri | 24 - 26 Feb 2017 | 41 | Kengeri | 09 - 11 Jun 2017 |
| 5 | TaranTaran | 27 - 28 Feb 2017 | 42 | Koduru | 12 - 14 Jun 2017 |
| 6 | Sri Mata Vaishno Devi Katra | 01 - 02 Mar 2017 | 43 | Puducherry | 15 - 16 Jun 2017 |
| 7 | Udhampur | 03 - 04 Mar 2017 | 44 | Attur | 17 - 19 Jun 2017 |
| 8 | Nangal Dam | 06 - 07 Mar 2017 | 45 | Karur | 20 - 22 Jun 2017 |
| 9 | Sirhind | 08 - 10 Mar 2017 | 46 | Kodaikanal Road | 24 Jun 2017 |
| 10 | Chandigarh | 12 & 14 Mar 2017 | 47 | Virudhunagar | 25 - 27 Jun 2017 |
| 11 | Rampur | 15 - 17 Mar 2017 | 48 | Arumuganeri | 28 - 30 Jun 2017 |
| 12 | Kasganj City | 18 - 20 Mar 2017 | 49 | Kayankulam | 01 - 04 Jul 2017 |
| 13 | Khalilabad | 22 - 25 Mar 2017 | 50 | Thrissur | 05 - 07 Jul 2017 |
| 14 | Mau | 26 - 29 Mar 2017 | 51 | Kannur | 08 - 10 Jul 2017 |
| 15 | Gaya | 30 - 31 Mar 2017 | 52 | Madgaon | 11 - 13 Jul 2017 |
| 16 | Patna | 01 - 02 Apr 2017 | 53 | Ratnagiri | 14 - 16 Jul 2017 |
| 17 | Kiul | 03 - 04 Apr 2017 | 54 | Sindhudurg | 17 Jul 2017 |
| 18 | Sitamarhi | 05 Apr 2017 | 55 | Roha | 18 Jul 2017 |
| 19 | Samastipur | 06 Apr 2017 | 56 | Mumbai CST | 19 - 22 Jul 2017 |
| 20 | Salmari | 07 - 08 Apr 2017 | 57 | Nasik Road | 24 - 25 Jul 2017 |
| 21 | Fakiragram | 09 - 10 Apr 2017 | 58 | Dhule | 26 Jul 2017 |
| 22 | Lumding | 11 - 12 Apr 2017 | 59 | Akola | 27 - 28 Jul 2017 |
| 23 | Agartala | 13 -14 Apr 2017 | 60 | Murtajapur | 29 Jul 2017 |
| 24 | Badarpur | 15 - 17 Apr 2017 | 61 | Amravati | 30 Jul 2017 |
| 25 | North Lakhimpur | 19 - 21 Apr 2017 | 62 | Nagpur | 31 Jul - 03 Aug 2017 |
| 26 | Rangpara North | 22 - 24 Apr 2017 | 63 | Amla | 04 Aug 2017 |
| 27 | Bagdogra | 25 - 26 Apr 2017 | 64 | Betul | 05 - 06 Aug 2017 |
| 28 | Dhanbad | 28 - 30 Apr 2017 | 65 | Habibganj | 07 - 09 Aug 2017 |
| 29 | Barrackpore | 01 - 02 May 2017 | 66 | Bina | 10 - 12 Aug 2017 |
| 30 | Kalyani | 03 - 05 May 2017 | 67 | Khajuraho | 13 - 14 Aug 2017 |
| 31 | Chandil | 06 - 08 May 2017 | 68 | Marwar | 17 - 18 Aug 2017 |
| 32 | Bhadrak | 09, 11 & 12 May 2017 | 69 | Balotra | 19 - 21 Aug 2017 |
| 33 | Puri | 13 - 16 May 2017 | 70 | Deesa | 22 - 24 Aug 2017 |
| 34 | Chatarpur | 17 - 19 May 2017 | 71 | Bhuj | 25 - 27 Aug 2017 |
| 35 | Kottavalasa | 20 - 23 May 2017 | 72 | Bhaktinagar | 28 - 31 Aug 2017 |
| 36 | Gudivada | 24 - 26 May 2017 | 73 | Gondal | 01 - 04 Sep 2017 |
| 37 | Mirylaguda | 27 - 30 May 2017 | 74 | Gandhinagar Capital | 05 - 08 Sep 2017 |

(Schedule subject to change)