

INDIA – UK

ENERGY FOR GROWTH PARTNERSHIP



Making Green Growth Markets Work

Making India's Green Growth Market Work

India is growing fast. Energy and infrastructure is central to sustaining this growth. India is committed to green growth.

To support the delivery of this vision, the India-UK partnership identified areas where work was required to increase the evidence base and generate [policy discussions on green growth pathways](#). This included the creation of national and sub-national platforms to identify policy options, disseminate research findings and inform policy choice making.

**“TOGETHER INDIA AND THE UK ARE AN
UNBEATABLE COMBINATION”**

SHRI NARENDRA MODI
Honourable Prime Minister of India

KEY MESSAGES

India is set to contribute more than any other country to the projected rise in global energy demand.

The 'India's Energy Security Scenarios 2047' building tool shows that India's oil and gas import dependence can be lowered from the current 31% to 21% by 2047,

To reduce import dependence by 10% by 2022, the Government of India is opening up new markets for exploration and production of oil and gas in India.

Opening of gas markets is expected to create huge opportunities e.g. one green-field LNG terminal is expected to create 5,500 jobs.

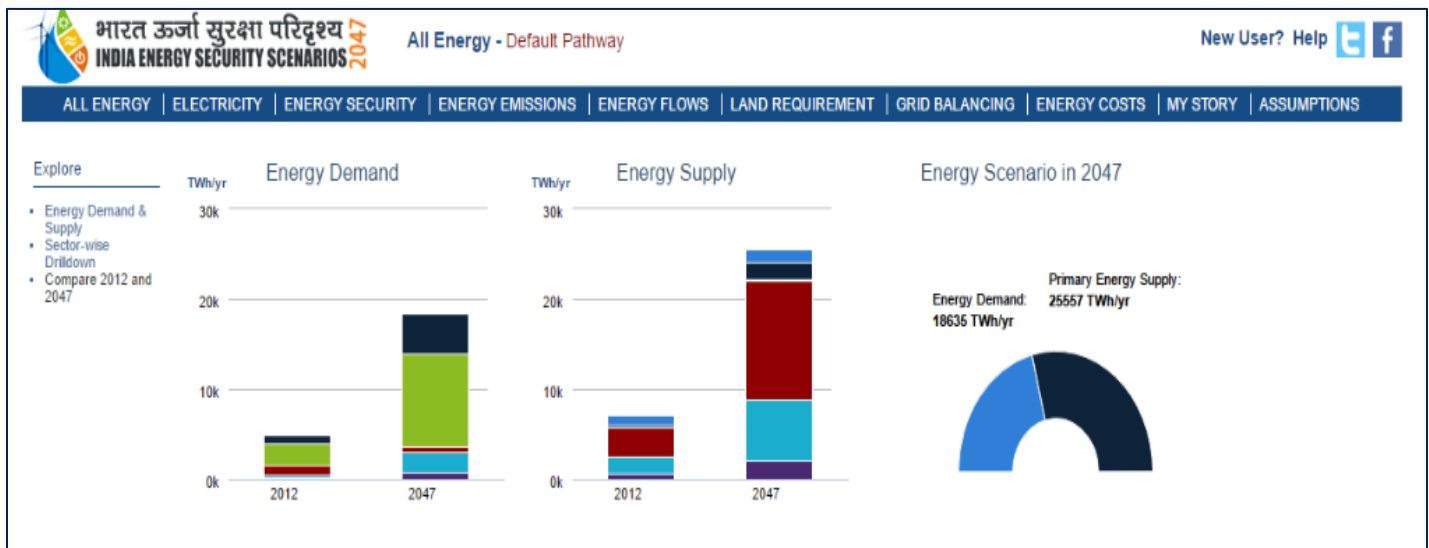
Engagement in power sector reform has been effective in opening up energy markets and improving energy access

This brief sets out the India-UK partnerships on green growth, which have resulted in successful co-creation of sustainable policies, reforms and partnerships which have led to [significant investments from both countries](#).

Mapping India's Energy Security Scenarios

As a response to the challenges facing India's energy sector the UK and India agreed to collaborate on developing a 2050 Pathways Calculator for India' in 2013. The work was taken forward through a partnership between the Planning Commission (now [NITI Aayog](#)) and the UK Department of Energy and Climate Change.

The partnership shared emissions modelling expertise to further strengthen and update analysis, resulting in February 2014, in the publication of the '[India Energy Security Scenarios \(IESS\) 2047](#)' - an energy scenario building tool. The figure below shows the IESS 2047 web-based dashboard. Source: <http://www.indiaenergy.gov.in>



The calculator helps support energy decisions in three ways:

1. **Modelling Analysis:** Measuring energy security implications, calculating energy and infrastructure costs, extending the model to sub-national level with the States of Gujarat, Assam and **Andhra Pradesh** and exploring co-benefit approaches in energy scenario planning.
2. **Communication:** Exchange of ideas to strengthen the 'energy discourse' with different target groups, so that useful information reaches citizens via application based platforms and stakeholder engagement events.
3. **Policy Narratives:** The lessons derived from the calculators have been used to provide useful narratives for policy makers on the impacts policies on emission scenarios

Building on the successful partnership the cooperation has been extended to evaluate the wider impacts of energy choices and assess the resilience of energy systems to stresses, such as climate risks, availability of water for energy purposes, quality of air, access to land, and so on.

“The first version of the tool, launched last year, has already helped policy makers arrive at pathways toward meeting the developmental goals of the government, like the 2022 target of 175 GW from renewables and enhancing India's energy security”

Anil Kumar Jain, Adviser (Energy), NITI Aayog.

“This tool will be of particular use in the framing of the national energy policy being carried out by NITI Aayog”

Arvind Panagariya, Vice-Chairman, NITI Aayog

Transitioning to Greener Fuels

The International Energy Agency's (IEA) 2015 report, [India Energy Outlook](#), supported by the India – UK partnership, shows that 'Natural gas currently plays a relatively minor role in the Indian energy mix', but can be important in future.

The Gas Market is critical to help India transition to greener growth, the UK government in collaboration with Ministry of Petroleum & Natural Gas (MoPNG) has [undertaken work to support the opening of this market](#). In the first phase, work focused on addressing [tariff and tax issues](#) which were hindering investment in India's gas sector. This included engaging with and learning from UK technical and commercial expertise on national gas grid and market based tariff regimes. The second phase focused on developing a comprehensive evidence base to examine the viability of physical trading of natural gas in India. **This initiative brought together government authorities such as MoPNG, Ministry of External Affairs (MEA), NITI Aayog and the Prime Minister Office (PMO) to build a consensus on the roadmap drawn for establishing an exchange-based trading system of natural gas in India.**

A final area of work has been to help reduce India's oil import dependency. Through a consortium partnership between IHS, ICF, and Petrofed, a study was undertaken to "[raise investment attractiveness of India's Exploration & Production \(E&P\) sector](#)" by identifying global best practices on "ease of doing business". This initiative has been appreciated by MoPNG, who participated in various shared-learning dialogues, stakeholder engagement process and workshops. **Interviews of key informants from the sector suggest that the India-UK partnership has started to unlock India's gas market for national and international businesses.** Additionally, as a result of the work, the case was made for setting up an India Gas Forum to help shape policy and drive improvements in the market and as a vehicle of continuity for stakeholder engagement across the gas value chain.

"India and the UK are "natural allies" and there is huge scope for collaboration between the two strategic partners"

Dharmendra Pradhan, Minister Petroleum and Natural Gas, Government of India

"The sky is the limit when it comes to collaboration between India and the UK in the field of oil and gas."

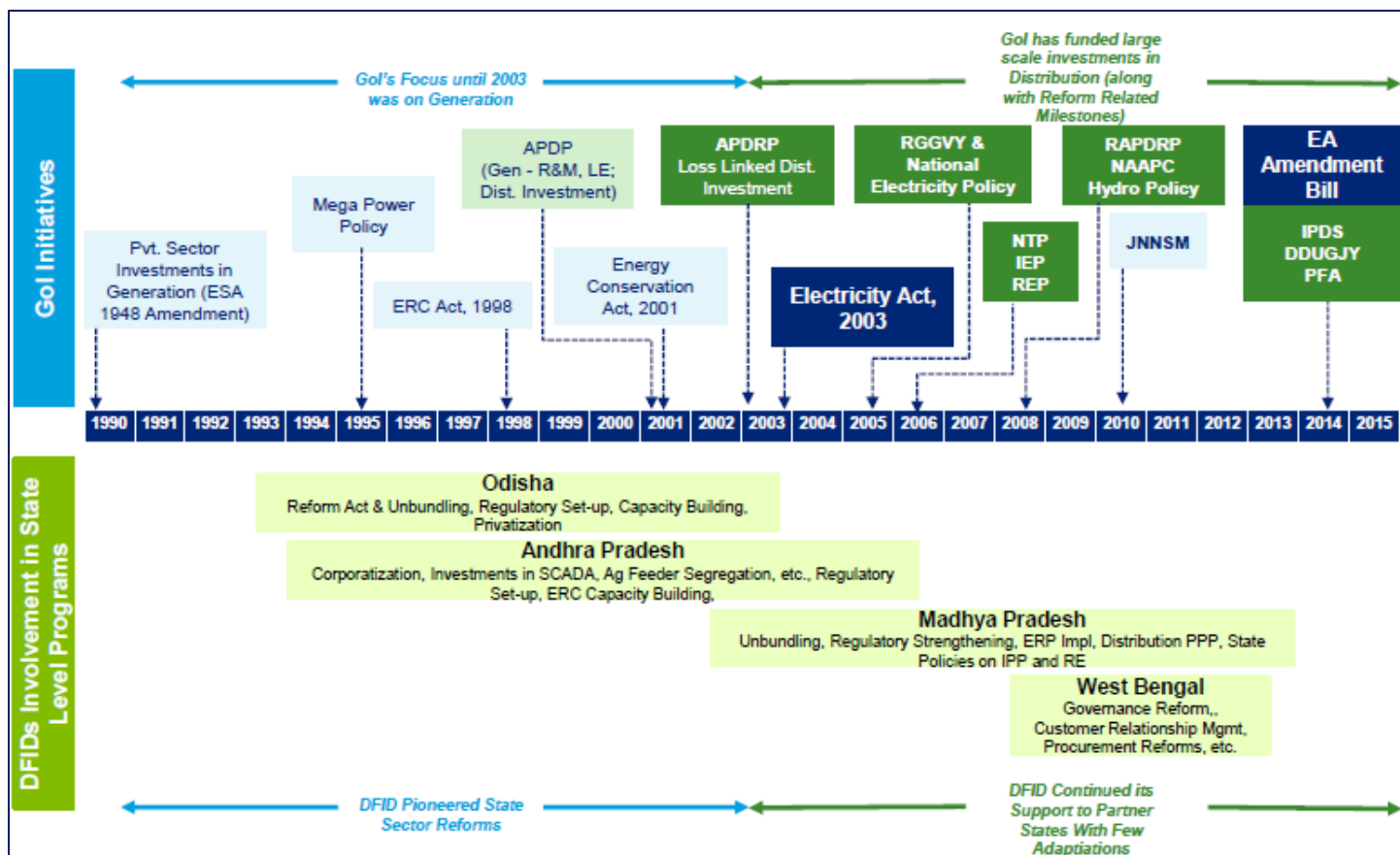
Jamie Banks, Regional Director – Oil and Gas, Department for International Trade, Government of United Kingdom.

Strengthening Power Sector Reforms in India

In the electricity sector, the UK's partnership has focused on reforms at the national and State levels to improve the quality and availability of power at affordable prices. An [independent review undertaken](#) shows that the reforms have led to a reduction in the State financial burden for power supply and increased investment.

In addition work under the India-UK Energy for Growth Partnership with PTC India Ltd. identified ways to [prepare Indian power market for carriage and content separation](#) - learning from the expertise of UK companies. The 'separation of carriage and content' in power sector means that while a distribution company will bring electricity to the consumers door, the supply and revenue recovery will be done by a separate company.

The Figure below set's out the past two decades of work that India and the UK have jointly undertaken to further India's pathway within the Electricity Sector at Sub-National Level. Source – Deloitte Study Report, 2016



Leveraging Energy and Green Growth Co-benefits

As part of the [UK's partnership with India on green growth](#), research was supported on [green growth planning](#).

India's approach to energy policy-making is largely supply oriented and planned in silos, leading to disconnects. For example, between: energy planning and social objectives, domestic and foreign policy energy debates, and energy and green growth policies. To bridge these disconnects and explicitly consider the linkages [multi-criteria decision analysis \(MCDA\) was adopted](#).

The MCDA refers to a suite of tools to identify and assess benefits and trade-offs during policy selection, by bringing relevant stakeholders together to rank objectives and thereby examine policy intervention pathways. [India's National Action Plan on Climate Change](#) recognizes the value of identifying co-benefit approaches to achieve climate targets.

The MCDA approach is very relevant to Indian energy policy because it allows decision-making to account for complexities, while maintaining rigor and deliberation. This approach is now being taken forward in the [Power Up Odisha](#) initiative under the India-UK Energy for Growth Partnership.

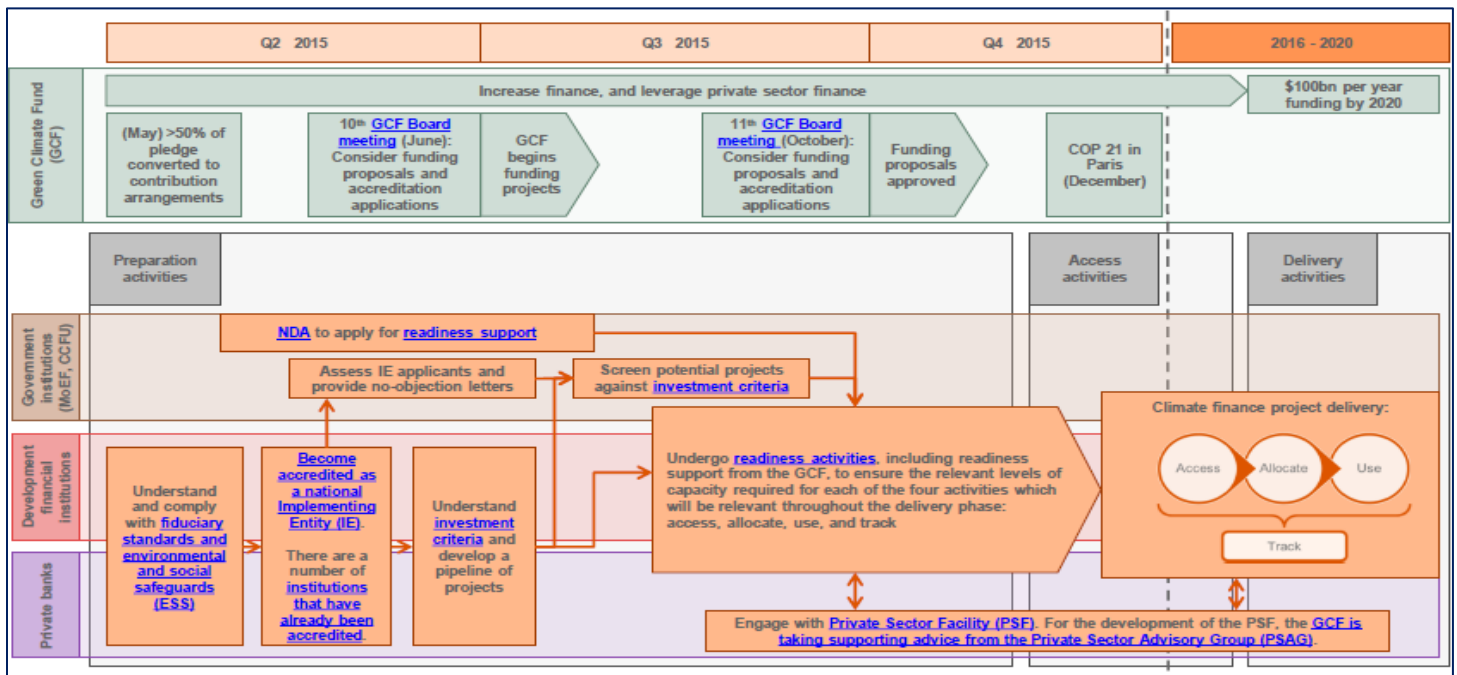
“Green growth and poverty eradication, are central to the India's sustainable development vision”

Mr. Prakash Javadekar, Minister of State for Environment, Forest and Climate Change, Government of India (May 2014 – July 2016)

Identifying financing sources for climate compatible development of Indian cities

The global architecture of climate finance is fast evolving. [The Green Climate Fund \(GCF\)](#) is taking shape and is likely to change the scale and [delivery of climate finance](#). Other sources of private and public finance are also emerging. As this landscape develops, the India - UK partnership commissioned work to [identify opportunities for supporting the governments of India in climate finance readiness](#) and GCF accreditation. The country assessment report gives an overview of existing climate finance systems and conditions in India and addresses a broad set of questions based on current concepts of readiness, such as: What are relevant policy strategies and laws? Which institutions are responsible for what? What is the level of private sector engagement? What are the key challenges in monitoring and tracking climate finance?

Figure illustrating Climate Finance Roadmap for India - Study on Green Climate Fund: Roadmap for Indian financial institutions



In 2016, under the India-UK partnership, CDKN India embarked on a project to [access ways to finance Indian cities](#) actions on climate compatible development. In collaboration with Germanwatch, CDKN conducted an analysis of international, national and local financing mechanisms and programmes that are suitable for cities like Gurgaon and Puri. The research suggested crowd-funding as a new co-funding opportunity by encouraging citizens to invest in projects selected by them and/or proposed by the city. Underutilized corporate social responsibility funds in India are another way of funding climate compatible development. Businesses lack ideas on what to invest in, which provides local governments with the opportunity to negotiate with the local private sector on how they could make a local impact with their efforts.

Minister of State with Independent Charge for Power,

Coal, New and Renewable Energy and Mines in the Government of India Mr. Piyush Goyal – Speaking at India-UK Energy for Growth Partnership, 2017, New Delhi – click on the picture above to listen to the talk.

April 6, 2017

Speaking at India-Uk Energy for Growth Partnership, 2017, New Delhi



“India is an important partner to the UK on issues of trade, energy, climate change and finance.” –

The UK’s Secretary of State for Business, Energy and Industrial Strategy, Rt Hon Greg Clark MP, while leading India-UK bilateral Energy Dialogue ‘Energy for Growth’, on 6-7 April 2017 in New Delhi.



Opportunities Ahead:

- Green growth opportunities can be identified by applying multi-criteria decision analysis (MCDA) approaches
- Significant opportunities exist for market reforms to accelerate green growth in energy pricing and regulatory measures, energy efficiency and conservation, and opening of gas and power markets for competitive bidding.
- Opportunities are also coming up for international partnerships to deliver reliable, sustainable, affordable energy technologies in India e.g. smart grids, meters, electric vehicles and battery technology
- Opportunities exist for upscaling and wide scaling carriage and content separation in distribution networks through public private partnership (PPP).

List of projects:

Project Title
Indian handbook created for first India-UK Energy for Growth Dialogue – Green Investment Bank
Developing a roadmap for a gas trading platform in India, KPMG
Energy Outlook for India, 2015, International Energy Agency
Preparing the Indian power market for carriage and content separation through collaboration with the UK, PTC India
Lessons Learnt from DFID India’s support for Power Sector Reforms over 20 years – Deloitte Study Report, 2016
Towards a sustainable development-based Indian INDC – by CDKN
Accelerating India’s transition to gas by enabling increased market access - IHS Markit with ICF and Petrofed



British
High Commission
New Delhi



This document is an output from a project supported by FCO India, under Prosperity Fund Program. While every effort has been made for the correctness of data/information used in this report, neither the authors nor AIDMI or CDKN accept any legal liability for the accuracy or inferences for the material contained in this report and for any consequences arising from the use of this material.