



## Madhya Pradesh State Action Plan on Climate Change

### Sector Policy Brief: INDUSTRY

**T**he industrial sector is one of the main contributors of greenhouse gases. Globally, industries account for over 40% of GHG emissions and also about one-third of global energy usage. In India, according to the national GHG inventory, direct industrial emissions account for nearly 21% of the country's total CO<sub>2</sub> emissions (INCCA, 2010), and over 35% of total energy consumption is by industries. Similarly, in Madhya Pradesh, the industrial sector is the largest energy consumer. Cement industries, which are the largest consumers of electricity in India, are an important part of the State's industrial sector. In the context of intense global concern over energy supply and demand and also climate change, it is imperative that industrial use of energy should be efficient and sustainable. Concerns also exist about the potential adverse impacts of climate change on industries, especially those that depend on the availability of natural resources that are threatened by climate change.

### **Industry in Madhya Pradesh: Achieving sustainable growth**

Madhya Pradesh has great potential for sustainable industrial development and growth, with its abundant mineral resources, high agricultural productivity, rich forest cover, established social infrastructure, good transport connectivity and strong telecommunications cover. Its central location in the country makes Madhya Pradesh a major transport hub.

In Madhya Pradesh, most industries are mining-based due to the abundant mineral wealth of the State, including limestone, coal, bauxite, iron ore and silica. The products of the major industries of Madhya Pradesh

include: cement, heavy electrical equipment, pharmaceuticals, automobiles, crockery, paper, bidi cigarettes, wood products, cotton textiles, sugar, soybean oil, leather and other traditional products. In addition, Madhya Pradesh hosts manufacturing facilities for a number of major Government of India undertakings, including Bharat Heavy Electrical Ltd. (BHEL), National Fertilizers Ltd., Bina Refinery, Indian Ordnance Factory, Security Paper Mill, Gun Carriage Factory, and a Currency Printing Press.

The Madhya Pradesh Industrial Promotion Policy 2010 focuses on the development and promotion of industries in the State, to avert the adverse impacts of the global recession on industrialisation. The aim of the policy is to ensure faster economic development and employment generation through the sustainable use of the resources available in the State, with special emphasis on the promotion of small and medium enterprises. In addition, the Madhya Pradesh Small Scale Industries Revival Scheme was launched in 2010, working towards the revival of closed down/"sick" units in the State while also addressing the issues of outdated technology, lack of skilled workers, inefficient management, and lack of professionalism, among others.

As of January 2011, the State has 733 large- and medium-scale industrial units providing livelihoods to about 1.75 *lakh* people. In 2011–2012, about 14,500 new small- and micro-scale enterprises were established in the State providing employment to nearly 31,000 people. Nineteen industrial growth centres have been established in the State with a view to attracting industries to set up shop in Madhya Pradesh.

Looking to the future, growth is anticipated in the areas of pharmaceuticals, automobiles, cement, consumer goods, food processing, tourism, textiles and IT. There is also potential for the expansion of mining and related industries.

## Industrial sector concerns and the potential impacts of climate change

There are many areas in which industry is contributing to the worsening of global warming and environmental degradation. It is generally observed that pro-industry and pro-business economic policies have often been at the expense of the welfare of the population and the environment. This relates to emissions, fuel usage, waste management, land use, and employment practices. There are also concerns about the potential adverse effects of climate change on industry. These issues are briefly outlined in this section.

### Emissions and inefficient energy use

Industrial emissions of GHG are causing serious concern for climate change. Also, obsolete and energy-inefficient technology is still used in many industries, leading to excessively high energy consumption.

### Waste management

Inappropriate waste management is a daily menace to society. Effluents of untreated waste by many industries and non-compliance with environmental protection laws and standards are a major concern. The Madhya Pradesh Industrial Promotion Policy 2010 promotes industries that deal in the recycling of waste materials, urban waste management and

## Strengthening the adaptive capacity of vulnerable communities through industrial schemes in Madhya Pradesh

Under a new scheme, two industrial regions (Ratlam-Nagda and Pithampur-Dhar-Mhow) and two industrial areas (Neemuch-Nayagaon and Dhar-Mhow) have been included in the DMIC (Delhi–Mumbai Industrial Corridor) industrial development project, with a vision of creating a strong economic base in this part of the State. This will provide livelihood opportunities for these rural communities. The State is also running many supporting schemes, promoting rural industries with incentives and subsidies. These schemes will directly strengthen the adaptive capacity of the rural people of the State, who are more vulnerable to climate change.

industrial waste management. The Policy provides various incentives to encourage entrepreneurs to invest in these areas.

### Land use

In the past, fertile land has been given over to industrial use. But under the Madhya Pradesh Industrial Promotion Policy 2010, there is now an earmarking of land-banks for industries in non-farmlands and non-forest lands. This will help towards conserving carbon pools and also in carbon sequestration. The Policy also ensures that sustainable livelihoods are provided to the families whose lands have been taken for industrial projects, by providing permanent jobs to at least one person in each affected family.

### Unemployment and vulnerability

Under the Madhya Pradesh Industrial Promotion Policy 2010, the State has been reviewing and initiating various employment generation schemes, like the Rani Durgavati Self-Employment Scheme and Deendayal Employment Scheme, aimed at the development of scheduled caste and scheduled tribe communities and the improved welfare of

unemployed youth, respectively. Such schemes should help reduce the vulnerability of beneficiaries to climate change.

## Adaptive capacity of the rural population

Rural communities that are largely dependent on agriculture for their food security and livelihoods are particularly vulnerable to the impacts of climate change, with the threat of increasingly frequent severe weather events leading to crop failure and reduced yields. Employment generation through industrialisation for these vulnerable communities is being pursued in the State (see box). Given the State's agricultural resources, emphasis is currently being placed on the development of food and herb processing industries to help in securing livelihoods for forest-dependent communities.

## Industrial inputs (natural resources) threatened by climate change

Industries that are directly dependent for their input materials on natural resources that are highly vulnerable to climate change, may face challenges as the impacts of climate change are increasingly felt. The industries that will mainly be affected include agriculture-based industries, paper industries, small- and medium-scale industries (fisheries, wood-based industries, handloom industries, etc.) and the building sector. Other concerns include increasing competition for access to water, land and energy.

## Adaptation and mitigation strategies set out in the SAPCC

The Madhya Pradesh Industrial Promotion Policy 2010 aims to ensure faster economic development and employment generation through the sustainable use of the resources available in the State. While it begins to acknowledge the challenges posed by climate change – that industry is a major contributor to global warming but at the same time is extremely



vulnerable to its affects – it could go further. These issues are explored in greater depth in the SAPCC, which builds on the policy with recommendations for sustainable industrial development and growth in Madhya Pradesh. The key strategies are to:

- ▶ Review the Madhya Pradesh Industrial Promotion Policy 2010. Climate change aspects should be integrated into the policy to promote low-emission technologies.
- ▶ Implement the Perform, Achieve and Trade (PAT) mechanism. As part of the National Mission for Enhanced Energy Efficiency, the Government of India has introduced the PAT mechanism in energy-intensive industries and has identified designated consumers and agencies in different states. The State Government should incorporate this into State policy and facilitate the implementation of PAT.
- ▶ Exploit mitigation opportunities through the carbon market. There is low awareness of carbon markets and associated schemes like the CDM (Clean Development Mechanism). The capacity of industries should be built based on the CDM. Technical and policy support may be provided to develop such projects.
- ▶ Devise an integrated water management plan for clusters of industrial units. The industrial sector is one of the largest consumers of water. Effective measures should be taken to reduce current consumption patterns by enhancing the efficiency of water use and by recycling and reusing water.
- ▶ Improve industrial waste management and pollution control. Industrial waste management

needs to be strengthened through enhanced networking among organisations, use of more efficient technologies and strict implementation of standards.

- ▶ Involve industries in plantation activities. Industries are among the main emitters of GHGs. The development of 'green belts' and the adoption of water harvesting structures would help in addressing the problem. As part of their corporate social responsibility, industries should be encouraged to reduce emissions and undertake plantation activities.
- ▶ Build capacity and awareness. The capacities of personnel and institutions should be developed to aid them in integrating climate change concerns into their planning and operations. Awareness-raising programmes should focus on understanding carbon and water footprints and on devising audit systems in all organisations to monitor their usage per unit of production. These efforts should also involve State industrial units in a dialogue on climate change issues, emphasising the cost effectiveness of adopting a more efficient path.
- ▶ Undertake research and development. Industries should pool their resources in undertaking research activities to develop state-specific energy-efficient technologies, with an emphasis on developing industrial networks for the recycling and reuse of materials.

#### Reference

INCCA. (2010). *Climate Change and India: A 4x4 Assessment*. INCCA Report No. 2. INCCA, India.

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The Madhya Pradesh State Action Plan on Climate Change (SAPCC) has been prepared by the Climate Change Cell, Environmental Planning and Coordination Organisation (EPCO), Housing & Environment Department, Government of Madhya Pradesh. The Plan outlines the strategies required to strengthen development planning and build a more climate-resilient State. It aims to promote the integration of appropriate adaptation/mitigation strategies into the State's development policies and programmes. It is based on secondary data and promotes 'no regret' measures.

In order to share the results of the Madhya Pradesh SAPCC and begin to address climate change concerns through development policies and programmes, the Climate Change Cell of EPCO commissioned a series of policy briefs. CDKN was tasked with producing these, based on the Madhya Pradesh SAPCC, as a Communications Project. This brief is one of a series of ten sector policy briefs, designed to inform stakeholders about the strategies and commitments established in the SAPCC that are of relevance to their sector. Further information can be found in the full SAPCC, available at [http://www.epco.in/pdf/Draft\\_MP\\_SAPCC.pdf](http://www.epco.in/pdf/Draft_MP_SAPCC.pdf)



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