



# PROJECT PROGRESS SHEET

## CHINA ELECTRIC MOTOR CHALLENGE — IMPROVING THE OPERATING EFFICIENCY OF CHINESE ELECTRIC MOTOR SYSTEMS



### Legend

- Eligible countries where SWITCH-Asia projects are implemented
- Eligible Asian countries for the SWITCH-Asia programme
- Non-eligible Asian countries for the SWITCH-Asia Programme

### Project implementation area

- City
- Region
- Country

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.



**BRIEF PROJECT  
DESCRIPTION**

**Project Objective:** To facilitate over 400 major industrial users of electric motor systems to improve the operating efficiency of their systems and achieve a far-reaching impact in the demand for high-efficiency motor systems, while actively supporting the creation of a stimulating policy environment.

**Major activities implemented up to February 2010:**

- Establishment of the China Motor Systems Challenge Club (website) and member database;
- 2 large workshops towards motor producers on new standards;
- 2 large technical trainings towards energy service companies (ESCOs) on motor system upgrades;
- 2 large workshops towards motor users to communicate the benefits of upgraded motor systems;
- 1 annual award ceremony to give recognition to excellent cases of energy-savings;
- 4 policy workshops to support the development of the relevant standards of the energy services industry;
- Project evaluation and dissemination.

**PROJECT PARTNERS**

China National Institute of Standardization (CNIS), China; United Nations Industrial Development Organization, Investment and Technology Promotion Office (UNIDO ITPO), China; ESCOs association of China Energy Conservation, China; Instituto de Sistemas e Robotica (ISR) - Universidade de Coimbra, Portugal.

**PROJECT IMPACT**

The project is making an impact in whole of China.

**PROJECT WEBSITE**

<http://www.motorsystem.org.cn>

**PROJECT ABBREVIATION**

China Motor Challenge

**PROJECT DURATION**

November 2008 – November 2011

**TARGET GROUPS**

- Industrial motor systems users: major motor systems energy users, including tens of thousands of industrial companies (large and small).
- Energy service companies (ESCOs): about 300 ESCOs operate in China. The project will focus on those 100 or more which are active or seeking to be active in providing services related to energy savings through motor systems upgrades.
- Manufactures of electric motors and system components: manufactures of electric motors and system components, with a particular focus on SMEs (about 800 serious companies). The majority of these producers are located in the south and east of China.
- Relevant policy-makers: government departments, policy-making bodies and enforcement agencies, responsible for the setting of new standards, labels and supervisory mechanisms, including: National Development and Reform Commission (NDRC), Ministry of Science and Technology (MoST), SAC (Standardization Administration Commission, AQSIQ (Administration for Quality Supervision, Inspection and Quarantine), etc.

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## OUTPUTS TO DECEMBER 2009 TO BE SHARED WITH WIDER AUDIENCE



- A series of training materials aimed at users, 400 sets in total
- A series of training materials aimed at ESCOs, 150 sets in total
- A series of training materials aimed at producers, 300 sets in total
- 80 users of industrial motor systems underwent system upgrades.
- 5 conference backdrops
- 12 000 project flyers
- 6 stand-up banners
- 1 TV interview by CCTV
- 10 articles in domestic newspapers and industry magazines
- The project website:  
[http:// www.mortorsystem.org.cn](http://www.mortorsystem.org.cn)

## RESULTS ACHIEVED TO JANUARY 2010

### THE SUSTAINABILITY GAINS

Environmental aspect: 255 industrial motor system users and 219 ESCOs have taken part in the training workshops so far, and most of them registered to China Motor Challenge Club as club members. These members have submitted 80 upgrading cases of motor systems, which obviously benefited the environment. The follow-up activities will further contribute to energy conservation and environment protection.

In addition, 193 motor producers understood latest development in international standards and related regulation by attending a workshop. This has helped them to understand how to adapt

their products to international requirements and how to get prepared for the upcoming new Chinese energy label for electric motors. All of the project activities, and particularly the policy efforts, will promote the market for high-efficiency electric motors and components, and thus guide the market to remove outdated low-efficiency products.

Economic aspect: The promotion of eco-friendly products provides clear business opportunities for motor system producers who produce high-efficiency products. ESCOs will benefit from a larger energy-saving service market by promoting the benefits of motor system upgrades and policy efforts stimulating the demand for high-efficiency products.

## SCP REPLICATION MECHANISM

The project has established a national information platform for China motor system users, ESCOs, electric motors manufacturers and energy-saving administrations, in order to promote the motor system upgrades, improve the management and technical competence regarding energy-saving, strengthen standards and the implementation of coherent policies, and improve the operational efficiency of electric motor systems as a positive contribution to energy-saving strategy in China.

## THE ROLE IN UPDATE OF SCP POLICIES

The lead applicant, China National Institute of Standardization (CNIS), is in charge of developing and promoting all China energy-efficiency related standards, and the management and promotion of energy-efficiency labels. It is also responsible for including products in the 'energy-saving product catalogue', which is relevant for public procurement and tax advantages for businesses buying such products.

## LESSONS LEARNT

### IMPORTANCE OF WORKING WITH LOCAL GOVERNMENT

The project team experienced that conferences organised with local government support invariably had better attendance and participation than conferences organised directly by the project partners. The lesson learnt is that effective and early coordination with local governments is essential to ensure events are organised and attended well.

### DIFFICULTY IN INVOLVING INTERNATIONAL PARTNER

The project coordinator, the lead partner, and all important stakeholders are Chinese. Therefore, all project information is in Chinese too. This has made it difficult to effectively involve the European partner in project activities. The European partner will visit China twice this year, to support some of the project's technical conferences.





## OUTREACH AND SYNERGIES

### EXPERIENCES FROM OTHER PROJECTS

CNIS has worked with UNIDO on a project entitled “China Motor System Energy Conservation Programme” (2001-2005), laying the groundwork to establish a major national programme to promote motor system improvements in factories throughout China.

This project can be considered an extension and complement to the China Motor System Energy Conservation Programme. The policy work of this project is additional and complementary to all policy work carried out under the EUEEP project, and the projects will strengthen each another. CNIS is an important sub-contractor in the EUEEP project, and is closely coordinating with its organisers.

### POSSIBILITIES FOR EXTENSION AND REPLICATION

Additional upgrades through awareness raised: a much larger number of industrial motor system users will continue to upgrade their systems, perhaps made aware of this opportunity through the club members, who have already upgraded, ESCOs; and the media impact. Additional upgrades through support provided: others may have already been aware of the opportunity, but are enabled or encouraged to make their upgrades through the impact of the project, i.e. through ESCOs, or through the awareness of their leaders or decision-makers.

The policy efforts will have a lasting impact on the market, through: 1) the new standard removing out-dated low-efficiency products from the market; 2) the new label providing clear and

simple information to users, who will be able to make a more informed buying decision; and 3) the supervisory mechanism ensuring that the claims of efficiency on the products are genuine. With the additional data collected, the motor system challenge website could be expanded to include a tool that can be used by system users or ESCOs to input a number of variables of the particular industrial application, and automatically generate an optimal motor system configuration to be installed. The project model could also be replicated to other industries or other countries. And the project’s policy work could readily be extended to other electric motor system components. CNIS is responsible for policy development of all energy efficiency standards, so the project could be extended to any other energy-using product. Additional training workshops could be organised based on the project model, to cover more manufacturers, end-users and ESCOs.

### POLICY LINKAGES

Through the project’s efforts, a number of hard policy results will be achieved. These mainly include the following aspects: a revision of the energy efficiency standard for electric motors; a new energy efficiency label for electric motors; and support to the establishment for a market supervisory mechanism for energy-using products.

### THE CONTINUITY OF THE PROJECT ACHIEVEMENTS

All project structures will remain in place after the end of the project. Extensive promotion and media activities will raise awareness of industrial energy-saving potential among factory managers and engineers, and the general pub-



lic. This effect will be strengthened by changing product offerings as product energy-efficiency is effectively exposed and the demand for high-efficiency products rises, stimulating producers to compete on energy efficiency. Also, the effective enforcement of the motor energy-efficiency label will remove low-efficiency products from the market. CNIS will use its own funds to continue to operate the website and databases. The China Motor Systems Challenge Club, with its 600 members, will continue to have a website with relevant databases, reference materials, and technical solutions. Working towards new standards, new labels, new market supervisory mechanisms and other policies are the daily work of CNIS and will continue in the future, funded by government sources.

## COOPERATION AND CONNECTIONS

The project team actively participated in the SWITCH-Asia Networking Facility meeting held in Kuala Lumpur, Malaysia, in June 2009. It was

very helpful to meet with all the other project teams and exchange experiences. CNIS is also a partner in several other SWITCH-Asia projects. The relevant people within CNIS exchange information regularly and have learned from one another's best practices. For example, certain management procedures have been standardised between the projects.

## AWARENESS OF THE PROJECT

CNIS has excellent relations with Chinese authorities, which has been a tremendous supporting factor of the project. Extensive promotion and media activities of the project also have caught the attention of the public.

## ADDITIONAL HIGHLIGHTS OF THE PROJECT

CNIS and EMCA organised the Award Selection for China Motor System Energy Saving Upgrade Outstanding Project at the end of 2009 based on the principles given below. Projects should:

- be real, legitimate, in line with state industrial policies and the relevant provisions;
- have formal implementation;
- have reliable- energy-saving technologies and have obtained obvious energy saving effects;
- may bring considerable economic benefits for users;
- have comprehensive promotion value.

The two awarded projects fully meet these requirements:

- 1 Tianjin Iron and Steel Company-Power Supply System Energy Saving Upgrade Project; and
- 2 Datang Generation Huayin Jinzhushan Power Plant---600 MW unit induced draft fan Energy Saving Upgrade Project.