City of Osaka

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Global Warming Countermeasures of Osaka City

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1. **Global Warming Action Plan of Osaka City**
   (1) Background and purpose
   (2) Action plan features
2. **Main Efforts under Action Plan**
   (1) Efforts for meeting plan targets
   (2) Efforts over medium and long terms
3. **Supporting Low-Carbon City Development Projects in Asian Cities through Inter-City Cooperation**

1. Global Warming Action Plan of Osaka City (formulated in March 2017)

(1) Background and purpose

- National government's NDC:
  26% reduction by FY2030 compared to FY2013
- Paris Agreement:
  Positioning the use of market mechanisms, including the Joint Crediting Mechanism (JCM)
- Sustainable Development Goals (SDGs)

As a mega city, Osaka has contributed to the achievement of the national target for GHG reductions and global warming countermeasures around the world

(2) Action plan features

○ A more ambitious target than the national target: 30% below FY2013 levels by FY2030 compared to 26% for the national government

2. Main Efforts under Action Plan

(1) Efforts for meeting plan targets

Promotion of energy efficiency and CO_2 reduction by citizens and businesses

CO_2 emissions from small- and medium-sized businesses, including offices and factories, amount to 2/3 of those from all businesses, equivalent to 40% of those from the entire city area

⇒ Reporting Program for Environmental Load Reduction Activities (Optional)
Promote voluntary efforts by small- and medium-sized businesses in the city area by supporting their activities through provision of information etc.

(2) Efforts over medium and long terms

Collaboration with urban development through urban planning

- **Promotion of measures taken at buildings**
  Energy efficiency standards (primary energy consumption and building shell performance, such as thermal insulation)
  (From April 2015: Mandatory for buildings (10,000 m^2 or larger) except residential buildings
  From October 2015: Mandatory for residential buildings (10,000 m^2 or larger and taller than 60 m))

Future perspectives

○ **In FY2017:**
Enforce Building Energy Saving Act on buildings (2,000 m^2 or larger) except residential buildings

○ **In FY2018:**
Enforce compliance with building shell performance standards. Apply labeling to more buildings

Building Energy-Efficiency Labeling System of Osaka City

Create a mechanism for promoting the introduction of ground source heat using groundwater (New energy system)

- Encourage much more use of ground source heat through groundwater in Osaka City by commercializing a high-capacity and low-cost groundwater heating system and making preparations for correct system operation

Future perspectives

○ **By FY2018:**
Ensure technology development and validation as well as institutional considerations for the high-capacity groundwater heating system

○ **From FY2019:**
Encourage more use of ground source heat through groundwater in Osaka City

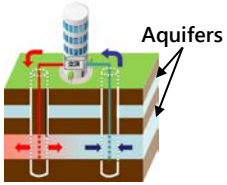


Image of groundwater heating system

Promotion of the use of area energy networks (New energy system)

- Create a mechanism for introducing self-reliance/distributed energy, such as cogeneration systems, and promoting the use of area energy networks that connect buildings

Future perspectives

○ **From FY2017:**
Promote efforts that include support necessary for achieving best practices: institutional design through collaboration with urban planning, the use of the subsidy system by the national government, and planning for the building of a regional platform that enables collaboration between local consumers and businesses

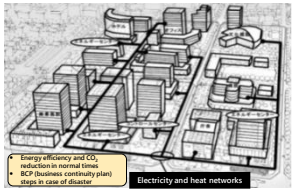


Image of use of area energy networks

Supporting low-carbon city development projects in Asian cities through inter-city cooperation *

- Create projects for developing low-carbon cities through public-private partnership and the use of the Joint Crediting Mechanism (JCM) based on **inter-city cooperation with Asian cities**

Future perspectives

○ **From FY2017:**
- Strengthen collaboration with UNEP-IETC, GEC, etc.
- Use the TeamOSAKA Network to create more projects through industry-academia-government cooperation
- Develop inter-city cooperative projects in Asian cities based on the results of the low-carbon city development project in Ho Chi Minh City

Exchanging Memorandum of Understanding with Mayor of Ho Chi Minh City, Vietnam, in September 2016

* As for support of low-carbon city development projects in Asian cities through inter-city cooperation, emissions reductions will only be counted as the results of the efforts, not included in reductions toward achieving targets.

3. Supporting Low-Carbon City Development Projects in Asian Cities through Inter-City Cooperation

(1) Support of low-carbon city development project in Ho Chi Minh City, Vietnam

- Help formulate Ho Chi Minh City's Climate Change Action Plan for the period 2016-2020

  Promote climate change countermeasures in 10 sectors:

  (1) Urban planning, (2) Energy, (3) Transportation, (4) Industry, (5) Water management, (6) Waste management, (7) Construction, (8) Healthcare, (9) Agriculture, (10) Tourism, culture, and raising of public awareness

- Create projects through public-private partnership

  Carbon reduction project using Joint Crediting Mechanism (JCM)

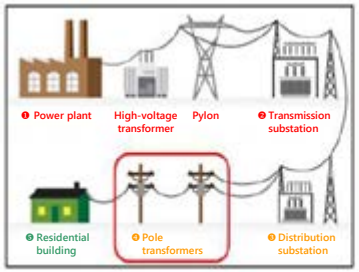
Eco-driving project with digital tachograph

Green hospital promotion project

Energy efficiency verification project at hotel

Energy efficiency project at factory using air-conditioning control system

Solar power generation project at shopping mall



High-efficiency amorphous transformer

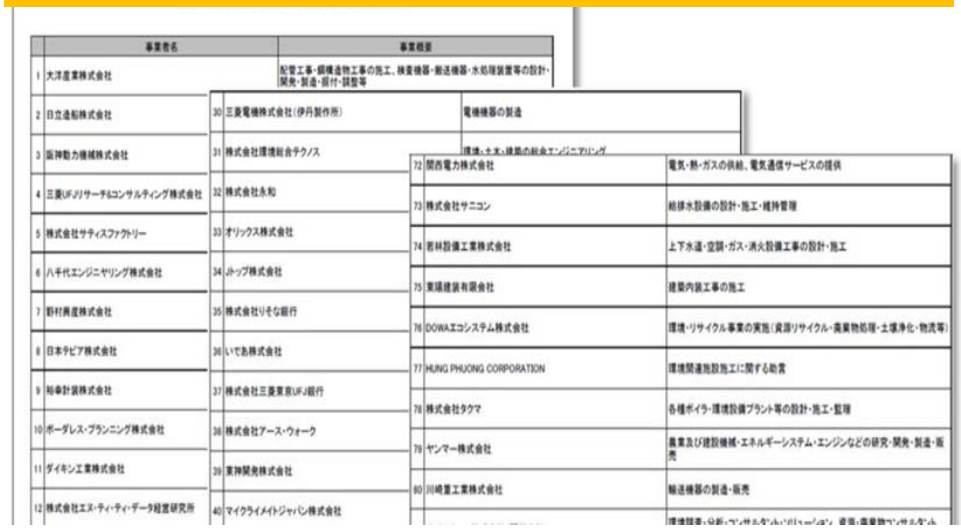
Project for introducing high-efficiency amorphous transformers into transmission/distribution network

(**Source:** Ministry of the Environment, Japan and NEDO)

(2) Development of inter-city cooperative projects

Aim to create projects in Asian cities by developing inter-city cooperative projects through collaboration with participants in the TeamOSAKA Network: a platform where businesses in Osaka or Kansai that deal in environmental technologies work with the City of Osaka, Global Environment Centre Foundation, etc.

Collaboration with participants in TeamOSAKA Network



	事業者名	事業概要
1	大洋産業株式会社	配管工事・鋼構造物工事の施工、検査機器・搬送機器・水処理装置等の設計・開発・製造・据付・調整等
2	日立造船株式会社	
3	阪神動力機械株式会社	
4	三菱UFJリサーチ&コンサルティング株式会社	
5	株式会社サティスファクトリー	
6	八千代エンジニヤリング株式会社	
7	野村興産株式会社	
8	日本テピア株式会社	
9	和幸計装株式会社	
10	ボーダレス・プランニング株式会社	
11	ダイキン工業株式会社	
12	株式会社エヌ・ティ・ティ・データ経営研究所	
30	三菱電機株式会社(伊丹製作所)	電機機器の製造
31	株式会社環境総合テクノス	環境・土木・建築の総合エンジニアリング
32	株式会社永和	
33	オリックス株式会社	
34	ふっ素株式会社	
35	株式会社りそな銀行	
36	いであ株式会社	
37	株式会社三菱東京UFJ銀行	
38	株式会社アース・ウォーク	
39	実神開発株式会社	
40	マイクライメイトジャパン株式会社	
72	関西電力株式会社	電気・熱・ガスの供給、電気通信サービスの提供
73	株式会社サニコン	給排水設備の設計・施工・維持管理
74	若林設備工業株式会社	上下水道・空調・ガス・消火設備工事の設計・施工
75	東陽建装有限会社	建築内装工事の施工
76	DOWAエコシステム株式会社	環境・リサイクル事業の実施(資源リサイクル・廃棄物処理・土壌浄化・物流等)
77	HUNG PHUONG CORPORATION	環境関連施設施工に関する助言
78	株式会社タクマ	各種ボイラ・環境設備プラント等の設計・施工・監理
79	ヤンマー株式会社	農業及び建設機械・エネルギーシステム・エンジンなどの研究・開発・製造・販売
80	川崎重工業株式会社	輸送機器の製造・販売

Inter-city cooperation between Osaka City and Asian cities

Exchange of opinions

(Understand environmental needs
Propose local projects)

Training in Japan

Creating projects through public-private partnership and inter-city cooperation

Vietnam
Support of low-carbon city development project in Ho Chi Minh City

Philippines
Support of low-carbon city development project in Quezon City

Thailand
Development of small desalination system using solar power generation

Malaysia
Expanding use of mercury-containing waste treatment technologies in the State of Penang