

Summary Table for Compendium of Energy Efficiency Policies of APEC Economies* (October–2013)

*While improvement of energy efficiency (EE) can be achieved through a number of means, such as goals to reduce CO₂ emissions, this table focuses on explicit EE goals.

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Australia	Overall 20% renewable energy	2020					<p>Action plans The National Strategy for Energy Efficiency (NSEE) is the overarching program of work for promoting energy efficiency in Australia. The Clean Energy Future Package, which includes a carbon price scheme and other support programs, came into effect in July 2012.</p> <p>Measures Industry: 1) Businesses using more than 0.5 PJ of energy a year are required to conduct an energy efficiency opportunities assessment and report the results publicly; 2) Increasing skills through training; 3) Assistance for energy intensive business. Transport: 1) Fuel consumption labelling standards; 2) Plans to develop standards to improve the fuel efficiency of the Australian vehicle fleet. Residential: 1) Establishment of the Greenhouse and Energy Minimum Standards Act 2012 to implement nationally Minimum Energy Performance Standards (MEPS) and Labelling for appliances and equipment; 2) Energy Star endorsement labelling; 3) Phasing out of inefficient light bulbs and hot water systems to be replaced with high efficiency solar, gas or electric heat pump systems; 4) Introduction of higher house energy efficiency rating and higher building standards from 2011. Commercial: 1) Significantly increase over time the stringency of energy efficiency provisions for all commercial buildings starting in 2010; 2) Mandatory disclosure of up to date energy efficiency ratings of commercial buildings where most sellers or lessors have office space of 2000 squared meters or more. Power: Generator Efficiency Standards program (in partnership with the Australian Government). Government: Improving the operational performance of buildings leased by the government. Other: 1) National Energy Efficiency Skills Initiative (NEESI); 2) Plans to strengthen energy audit and assessment capabilities; 3) Tax measures-expenditure on capital equipment, which may improve energy efficiency, is generally deductible under capital allowance provisions; 4) Subsidies for Low Carbon Communities provided to support local councils and operators of community facilities to implement energy efficient upgrades to street and traffic lights, council buildings and community facilities.</p>	The Australian Bureau of Statistics collects and publishes energy use statistics. The Bureau of Resources and Energy Economics undertakes decomposition analyses for the whole economy. Department of Resources, Energy and Tourism administers the Energy Efficiency Opportunities program where companies report energy efficiency information; and monitors residential energy use and the effects of its programs. The Clean Energy Regulator administers the National Greenhouse and Energy Reporting Scheme, collecting energy use data.
Brunei Darussalam	Reduction of energy intensity (TPES/GDP) by 25%	2030	2005	No sectoral goals			<p>Action Plans A number of measures have been identified to improve energy efficiency performance in five sectors between 2010 to 2030.</p> <p>Measures Residential Sector: Electricity tariff revision and meter replacement to encourage consumers to plan their energy use better Power Sector: Improvement of power plant efficiency from 23% to 45% by phasing out simple cycle power plant and replacing with more efficient power plants and maximizing utilization of existing plants Residential, Industrial and Government Sectors: Formulation of a national standard and labelling for air conditioning system and lighting Industrial and Government Sectors: Energy Audits to improve energy management Transportation Sector: Introduction of energy efficient vehicles, installation of charging bays across the country</p>	Action plans will be monitored and regulated by the Energy Department, Prime Minister's Office
Canada	20% increase in energy efficiency (adopted at sub-federal levels)	2020	Declared in 2008, but base year unspecified	No sectoral goals			<p>Action plans ecoENERGY Efficiency Initiative and ecoENERGY Retrofit-Homes: The ecoENERGY Efficiency Initiative, operated through Natural Resources Canada's Office of Energy Efficiency, provides a broad framework of programs through which energy conservation and energy efficiency are promoted in every sector of the Canadian economy. The ecoENERGY Retrofit-Homes programme focuses on energy efficient retrofits in the home ie energy efficient lighting.</p> <p>Measures Industry: 1) EcoENERGY Efficiency Initiative for Industry offers Dollars to \$ense workshops (also available to commercial/institutional sectors) to educate on measures, including EE, that reduce operating costs and create a better work environment; 2) CanmetENERGY conducts R&D and knowledge transfer activities on industrial energy systems; 3) The voluntary Canadian Industry Program for Energy Conservation provides information and tools to improve EE. Transport: 1) EcoENERGY Efficiency Initiative for Personal Vehicles offers education to Canadian motorists, including the AutoSmart driver education program; 2) EcoENERGY Efficiency Initiative for Fleets, including the FleetsSmart information campaign and SmartDriver courses; 3) CanmetENERGY conducts R&D on advanced fuels, hybrid, and electric vehicles, and fuel cells; 4) New fuel consumption regulations will be introduced in the 2011 model year. Residential: EcoENERGY Efficiency for Buildings and Houses provides home builders with training to achieve the R-2000 standard or affix an EnerGuide label. Residential and Commercial: 1) EcoENERGY Retrofit provides grants to owners/operators of buildings and houses that perform energy upgrades; 2) CanmetENERGY conducts R&D on building technologies and simulation tools; 3) The Canadian Commission on Building and Fire Codes agreed to better the National Energy Code for Buildings (NECB) by 25% by 2011 compared to the NECB in 1997, add EE as 5th core objective in the National Building Code, increase the number of products covered by minimum energy performance standards, and facilitate home-owners' access to energy audits and retrofits. Power: Accelerated Capital Cost Allowance (CCA) for Clean Energy Generation allows 50% CCA for projects to use fossil fuels efficiently, including co-generation. Government: Federal Buildings Initiative to promote EE retrofits in government buildings. Other: 1) The Energy Efficiency Act authorises the government to set minimum energy performance standards (MEPS) and labelling requirements for energy using equipment; 2) Low interest loans</p>	EcoEnergy Efficiency Initiative conducts annual program reviews. Office of Energy Efficiency (OEE) monitors and reports on its activities through an annual Report to Parliament under the Energy Efficiency Act. OEE also produces a report on Energy Efficiency Trends in Canada (using Log-Mean Divisia Index I Methodology).
Chile	Chilean government published the National Energy Strategy, which established a goal of 12% reduction in energy projection by 2020	2020	Benchmark energy use	No sectoral goals			<p>Action plans In 2011 the Chilean Government published the National Energy Strategy. In May 2013, Chile's Energy Efficiency Action Plan 2020 was launched.</p> <p>Measures Industry and Mining: 1) Promotion of the implementation of energy management systems; 2) Promotion of cogeneration (CHP); 3) Promotion of technical assistance to projects; 4) Incorporation of efficient technologies. Transport: 1) Improve energy efficiency of vehicles light and medium vehicles entering the park; 2) Improve operating efficiency of the fleet passenger vehicle; 3) Promote the introduction of more efficient technologies in the heavy vehicle park; 4) Improve the efficiency of the existing fleet of heavy vehicles; 5) Promote energy efficiency throughout the supply chain of heavy vehicles; 6) Promote the shift to more efficient transport; 7) Starting of electric mobility. Buildings: 1) Improve the quality of envelopes and equipment in buildings built without energy efficiency standards; 2) Promote efficient energy management of buildings; 3) Promote the design of buildings with high energy efficiency standard; 4) Promote the supply of construction products and services with efficiency standards; 5) Promote energy efficiency in street lighting of vehicular and pedestrian areas from urban areas. Firewood: 1) Improve the knowledge regarding the firewood and its processes; 2) Improve firewood burning and update appliances; 3) Improve quality standard of firewood; 4) Increase the efficiency of residential firewood consumption; 5) Develop the firewood energy market. Appliances: 1) Expand Energy Efficiency Labelling; 2) Set minimum energy performance standards (MEPS); 3) Develop of the program of Efficient Residential Lighting. Cross Sector: 1) Energy Efficiency Seal; 2) Creation of Interministerial Committee on Energy Efficiency (CIEE); 3) Raise awareness and promote energy efficiency; 4) Recognition of job skills related to Energy Efficiency; 5) Promotion of the integration of energy efficiency in education; 6) Promote the integration of energy efficiency in education; 7) Promote I + D in energy efficiency; 8) Incorporation and promotion of smart grids; 9) Promote the measurement and verification (M&V) in the implementation of energy efficiency programs.</p>	The Division of Energy Efficiency and AChEE have established an area of Measurement and Verification. It seeks to implement methodologies to produce reports at both macro and project level. At the macro level, energy statistics are prepared by the Prospective and Energy Policy Division of the Ministry of Energy, while economic data (national accounts, production) are reported by both the Central Bank of Chile and by the National Institute of Statistics. In addition, Chile is participating in a project to build a base of energy efficiency indicators in Mercosur countries and partners, with the assistance of ECLAC. At the project level, the results will be measured based on international methodologies (eg. Protocol CMVP) or by third parties (universities, consultants) to support the savings achieved by each project.

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms
China		2010	2005	Buildings: to save 110 million tonnes of coal equivalent in building energy consumption from 2005 to 2010.	2010	2005	China has set up an energy conservation and emission reduction leadership group chaired by the Premier. The system of "one-vote veto" based on "Energy Conservation and Emissions Reduction Statistics and Monitoring Evaluation System and Methods" is applied to evaluate achievement of various EC tasks divided among local governments and major enterprises. The local government will be commended or criticized depending on their performance on energy conservation and emissions reduction. Key energy-consuming entities must employ energy managers and provide annual reports on EE&C activities.
Hong Kong, China	Reduction of energy intensity by 45% by 2035 from 2005 levels	2035	2005	N/A	N/A	N/A	Energy end-use database, surveys, benchmarking, trend analysis and annual updates of Hong Kong energy end-use database.
Indonesia	a) Achieving energy intensity of less than 1 b) Realising energy savings potential (energy savings potential in 2000-2025 could be as high as 41 % compared to a base-case scenario)	2025	2005	Sectoral goals are a subset of the overall goal part b) a) Industry sector (for select industries) 15% to 30% b) Commercial building sector electricity savings 25% c) Residential sector 10% to 30%	2030	2005	Through the energy conservation clearinghouse; data collection by the National Statistical Agency -BPS; specific government energy surveys; and mandatory monthly reporting by government departments/agencies and regional governments on office building energy use.
Japan				Industry: a) Federation of Electric Power Companies: Reducing CO ₂ emissions intensity (emissions per unit of end-user electricity) by an average of approximately 20%; b) Petroleum Association of Japan: Improving CO ₂ emissions efficiency by 13%; c) Japan Iron and Steel Federation: reducing energy consumption by 10%; d) Japan Cement Association: Improving EE by 3.8%; e) Japan Chemical Industry Association: Improving EE by 20%; f) Japan Paper Association: Improving EE by 20%, improving CO ₂ emissions efficiency by 16%	2008-2012	1990	For Sectoral Goals: Some business entities in the industrial and energy-conversion sectors that participate in the follow-up research are evaluated in terms of voluntary action plan achievements.

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Korea	Reduction of energy intensity (TPES/GDP) by 46% (from 0.341 in 2006 to 0.185 in 2030)	2006	2030	<p>Industry: Reduce energy use by 34.4 Mtoe (30.3% reduction from BAU scenario)</p> <p>Transport: Reduce energy use by 12.3 Mtoe (33.5% reduction)</p> <p>Residential & Commercial: Reduce energy use by 15.5 Mtoe (26.2% reduction)</p> <p>Public & Others: Reduce energy use by 1.9 Mtoe (31.5% reduction)</p>	2030	2007	<p>Action plans 4th Rational Energy Utilization Basic Plan (2008-2012), announced in December 2008, is a part of the National Energy Basic Plan, announced in August 2008. The goal of the plan is to improve EE by 11.3% by 2012, which requires curbing the growth in primary energy use by 2.3% per year. The plan applies to the industry, transport, residential, commercial, public, and other sectors. The government has allocated USD 18.3 billion for the Energy Utilization Basic Plan during 2008-2012, including USD 6.2 billion for the Rational Energy Utilization and USD 12.1 billion for the Land & Transport Infrastructure plans. The plan promotes tax reduction in investment in industry and commercial buildings (20% reduction from the corporate or individual income taxes for the installation of specified EE facilities).</p> <p>Measures Industry: Mandatory designation of energy manager, mandatory energy audit (2007), voluntary agreement for heavy energy consuming sites (1998), reports of energy use, voluntary certification of high efficiency products (46 items, such as transformers, pumps, LED lightings, etc.). Transport: Regulated Average Fuel Efficiency (AFE) for passenger cars (2006), eco-driving, and "no car once a week." Residential: Regulated MEPS (2001) and labelling (1992) for appliances (23 items). Commercial: Voluntary building EE rating (2001) and regulated building energy code. Power: Demand side management by energy supplier (1994). Government: Reduction of energy use in automobiles (16.5 % increase in AFE by 2012), buildings (for buildings with the highest level of EE (grade 1), the government will increase the maximum floor area ratio by 6 %), and appliances (purchasing models with grade 1 label and less than 1 watt of standby power). Other: Energy saving campaign, national EE awards, prize contest for PR materials, early stage education in elementary and middle school, government spending in seven core technologies, such as building energy management systems, electric power IT, energy storage, green vehicles, LEDs, energy efficient appliances, and green home appliances.</p>	Ministry of Knowledge Economy (MKE) and Korea Energy Management Cooperation (KEMCO) are responsible for monitoring and reporting. The report is periodically submitted to National Energy Saving Promotion Committee.
Malaysia	The National Energy Efficiency Master (NEEMP) Plan has an overall target to reduce the electricity consumption by 10% by 2020	2020	2011	The NEEMP is targeted on three main sectors, i.e. industrial, commercial and residential sectors. A total of 18 programmes are planned under the NEEMP to save a total of 85 TWh in the period 2011-2020 and to reduce the annual electricity consumption by nearly 19 TWh.	2020	2011	<p>Action plans The National Energy Efficiency Master Plan (NEEMP) is a long term plan to improve electrical energy efficiency. The NEEMP is presenting a strategy for a well-coordinate and cost-effective implementation of energy efficiency in all segments of the society, which will lead to reduced energy consumption and economic savings for the consumers and the nation. The NEEMP presents the instruments for a successful implementation of energy efficiency in Malaysia for the period between 2011 and 2020, which will address and mitigate these barriers. The NEEMP is intended to jump start a long term national energy efficiency culture in order to address a number of important national goals;</p> <ul style="list-style-type: none"> - Reduce rate of depletion of indigenous fuels - Reduce imports of required fuels - Reduce adverse environmental impacts and CO2 due to the consumption of energy - Better manage electricity demand - Manage overall energy growth - Reduce the energy consumption per GDP ratio to 1:1 - Get the price signal right; remove fuel subsidies and move to market pricing 	The progress and achievement of the NEEMP is monitored through economic indicators. The indicators are developed within the programmes outlined in the NEEMP.
Mexico	PROSENER (Energy Sector Program): Energy savings from electrical power consumption of 43,416 GWh PRONASE (National Program for Sustainable Use of Energy): Energy reduction impact of about 43 TWh in final use of energy (from baseline).	2012	PROSENER: 2006	<p>Energy Saving Goals: a) Daylight Saving Time (1,363 GWh); b) Energy Efficiency Standards Program (17,850 GWh); c) Energy Saving Program for the Federal Public Administration (221 GWh); d) The Electrical Energy Saving Trust Fund (FIDE's) Program (4,414 GWh) FROM PRONASE: Opportunity areas with highest potential to reduce energy consumption are: a) Transport (9.0 TWh 2010-2012), lighting (19.2 TWh in 2010-2012), b) Equipments and appliances (6.6 TWh 2010-2012), c) Cogeneration (2.1 TWh 2010-2012), d) Buildings (1.4 TWh 2010-2012), e) Industrial</p>	2012	2007	<p>Action plans (for overall goals) Mexico's government has adopted several mechanisms for the promotion of EE and its introduction at different levels in the residential (or domestic), municipal, industrial, commercial (and services), and government sectors. From PROSENER, the strategies that have been carried out are: Strategy III.1.1 - To propose financial policies and mechanisms in order to accelerate the adoption of EE technologies in public and private sectors. Strategy III.1.2 - To drive the optimisation of supply and use of energy from the entities and organisations that make up the Federal Public Administration. Strategy III.1.3 - To extend coordinated actions among public, social, and private sectors, in order to encourage the efficient use of energy by the population. Strategy III.1.4 - To promote the reduction of energy consumption in residential and building sectors. Strategy III.1.5 - To promote the efficient generation of electricity through self-supply and co-generation. Strategy III.1.6 - To integrate public policy proposals in order to boost the potential of efficient co-generation. Strategy III.1.7 - To promote a series of regulations that allows the Regulatory Energy Commission to broaden and strengthen its regulatory powers in regulating and promoting efficient co-generation. Strategy III.1.8 - To support research activities related to increasing EE in generation, distribution, and electrical energy consumption. In addition, from PRONASE publication in late 2009, the following strategies are also implemented: Strategy 1.1: Increase fuel efficiency of the vehicles added to the national fleet. Strategy 1.2: Improve best practices in vehicle utilization. Strategy 2: Increase the efficiency of the lighting inventory. Strategy 3.1: Increase the efficiency in equipments and appliances added to the inventory. Strategy 3.2: Replace inefficient equipments and appliances in the inventory. Strategy 4: Promote the cogeneration in final users with high energy demand. Strategy 5.1: Improve the insulation on new buildings.</p>	Monitoring is carried out every six months or annually and results are reported in the following documents: Activities Report of the Ministry of Energy, Government Report, Sector Outlook, and National Energy Balance. In addition, CONUEE has developed its Annual Work Program, in accordance with the Law for the Sustainable Use of Energy and its ordinance, which is the programmatic document that establishes the objectives, strategies, action lines, goals and indicators for each fiscal year.
New Zealand	Achieve a rate of energy intensity improvement of 1.3 percent per annum	N.A.	N.A.	<p>a) Transport: by 2016, the efficiency of light vehicles entering the fleet has further improved from 2010 levels; b) Business: by 2016: an improvement in the commercial and industrial sector energy intensity level; by 2025: to utilise up to 9.5 PJ per year of energy from woody biomass or direct use geothermal additional to that used in 2005 c) Residential: by 2013, insulate 188,500 homes. d) Products: by 2016, extend minimum energy performance</p>	varies by goal	varies by goal	<p>Action plans New Zealand's EE goals and implementation mechanisms are outlined in the New Zealand Energy Efficiency and Conservation Strategy (NZECS) 2011-2016 .</p> <ul style="list-style-type: none"> • Information – targeting consumer and business needs. These include websites aimed at various audiences; a range of marketing and advertising campaigns for print, radio and television; product, appliance and vehicle labelling programmes including vehicle fuel economy labelling and Energy Star™; EECA Awards that celebrate and promote energy efficiency practices in communities, businesses and industry; and sponsorship of capacity-building programs for various professionals. • Incentives – funding of financial products to help build capability and leverage investment. These include Warm-Up New Zealand: Healthy Homes matching grants for home insulation, Commercial Buildings Audit and Works Programme to provide grants for energy efficiency projects in commercial buildings; Efficient Lighting Programme to promote efficient residential lighting upgrades through several mechanisms; Compressed Air Scheme to improve efficiency of industrial air compressors; Heavy Vehicle Fuel Efficiency Programme to fund training, audits and efficiency monitoring for business fleets. • Codes and standards – to underpin confidence in energy efficient products and practices. These include Minimum Energy Performance Standards (MEPS) and Minimum Energy Performance Labelling (MEPLs) for appliances and equipment. • Research and development – to support innovative capability. These include \$12 million per annum through the Energy and Minerals Research Fund; APEC funded Electric Vehicle (EV) research project on electric vehicles (EV) connectivity across the APEC region. 	The Minister of Energy and Resources is accountable for the overall performance of the strategy. The Ministry of Business, Innovation, and Employment (MBIE) reports progress on the implementation of the strategy to the Minister as published annual progress reports. All agencies involved in the implementation of the strategy are accountable for monitoring and report to MED on the impacts of their programs and the contribution to overall strategy objectives.
Brunei Darussalam	Reduction of energy intensity (TPES/GDP) by 25%	2030	2005	No sectoral goals			<p>Action Plans A number of measures have been identified to improve energy efficiency performance in five sectors between 2010 to 2030.</p> <p>Measures Residential Sector: Electricity tariff revision and meter replacement to encourage consumers to plan their energy use better Power Sector: Improvement of power plant efficiency from 23% to 45% by phasing out simple cycle power plant and replacing with more efficient power plants and maximizing utilization of existing plants Residential, Industrial and Government Sectors: Formulation of a national standard and labelling for air conditioning system and lighting Industrial and Government Sectors: Energy Audits to improve energy management Transportation Sector: Introduction of energy efficient vehicles, installation of charging bays across the country</p> <p>Other Initiatives</p> <ul style="list-style-type: none"> • Regulatory Measures: Formulation of policies and regulations on EE&C • Voluntary Measures: National Energy Efficiency and Conservation Initiative Awards (NEECIA) • Financial Measures: Funding for EE&C activities by the government and private sector • Energy Pricing regulation by government • Cooperation with NGOs • Involvement in programs with ASEAN, APEC and Japan 	Action plans will be monitored and regulated by the Energy Department, Prime Minister's Office

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Peru	Develop energy efficiency programs and promote renewable energy.	2040	2010	The Peruvian government has established the goal of achieving 15% of energy savings by 2040 among the residential, industry (productive and services), commerce and public, transportation and other sectors from a 2010 baseline. To achieve this goal, all action plans will be implemented in each sector as proposed in the Referential Plan for the Efficient Use of Energy 2009–2018. Goals (in Petajoules – PJ) for each sector are: a) Residential - 621 PJ; b) Industry - 518 PJ; c) Commercial and Public - 8 PJ; d) Transport - 1051 PJ; e) Other plans and sectors - 1203 PJ; Total sectoral goal is 3401 PJ of energy demand reduction.	2040	2010	Action plans The Peruvian government issued its Referential Plan for the Efficient Use of Energy 2009–2018, which is the current legal instrument to achieve the official energy efficiency goals through the action plans described as follows in the four sectors considered: Measures Residential sector: 1) Modernisation of lighting; 2) Improved energy consumption habits of people; 3) Replacement of electric water heaters with solar water heater systems, and 4) Replacement of traditional wood stoves with improved wood stoves. Industry sector: 1) Replacement of conventional motors with efficient electric motors; 2) Optimisation and modernisation of high-pressure heaters; 3) Modernisation and improvement of lighting, and 4) Implementation of cogeneration projects. Public sector: Main actions are targeted to energy efficiency in buildings, labelling, house appliances, among others. Transport sector: Two of the most important projects that have been set in the Referential Plan are the Efficient Driver Project and One Day without a Car Project.	On January 1 2009, the Peruvian Government published the Ministerial Resolution (or Supreme Decree) No. 038–2009–MEM/DM, which approves the Energy Consumption Indicators and monitoring methodology for key economic sectors. Currently, the Ministry of Energy and Mines' General Directorate of Energy Efficiency is the area responsible for the monitoring activities of energy efficiency and renewable energy policies.
Philippines	1) Ensure adequate supply of energy; 2) Curb the impact of oil price volatility on the economy, reduce carbon dioxide emissions and protect the environment; 3) Achieve an estimated potential cumulative energy savings of 70,643 KiloTons of Oil Equivalent (KTOE), or at an annual average potential energy savings of 2,522 KTOE.	2030	2010	Target a 10% energy consumption reduction in the final energy demand in the commercial and government building, residential, industrial/manufacturing, power, transport and agriculture sectors	2030	2010	Action plans The National Energy Efficiency and Conservation Program (NEECP). Measures Component 1: Social Mobilization, Information, Education and Communication Campaign Component 2: Energy Efficiency Standards and Labelling Program Component 3: Government Energy Management Program (GEMP) Component 4: Energy Management Services/Energy Audits Component 5: Voluntary Agreement Program Component 6: Recognition Award Program Component 7: Fuel Economy Run Program (currently part of the IEC program; however, necessary to establish/generate significant data for a vehicle labelling program in the future) Component 8: Implementation of Locally Funded Projects that promote Energy Efficiency and Conservation to include: • Fuel Conservation and Efficiency in Road Transport (FCERT) • Power Conservation and Demand Management (Power Patrol) Component 9: Implementation of Foreign Assisted/Technical Assistance.	* Monitoring of activities through monthly and quarterly accomplishment reports. * Action plan is measured through percentage utilisation of annual budget fund. * Other activities are monitored and measured through the submission of quarterly energy consumption reports and annual energy consumption report as well as annual energy conservation program by private companies (commercial, government building, and industrial sectors). * Make use of surveys, statistics compilation, end-use information, reporting and trend analysis
Russia	The overall goal of minimum 40% reduction in energy intensity of the Russian economy (defined as Total Final Energy Consumption/GDP) was set by the Presidential Decree N. 889 entitled "Concerning some measures for improving the energy and ecological efficiency of the Russian economy" (June 4, 2008).	2020	2007	No clearly-established sectoral goals.			Action plans The Ministry of Energy put forth a Complex Measures Plan for the realisation of the federal policy for energy saving and improvement of EE across the Russian economy to facilitate the execution of the 4 June 2008 Presidential Decree, which covered: 1) the development of a modern legal and regulatory framework; 2) the establishment of an institutional structure; 3) government financial support and the creation of a favourable investment climate; 4) increased use of public-private partnerships; 5) informational and educational support for various measures and activities at the international, federal, regional, and municipal levels. The Ministry of Energy is finalising the draft of the Federal Targeted Program "On Energy Saving and Energy Efficiency Improvement up to the year of 2020," which will replace and upgrade the FTP EEE, while focusing on reaching the overall target of minimum 40% reduction in energy intensity of the Russian economy by 2020 compared to 2007. Measures (introduced with the new Federal Law on "Energy Conservation and Increase of Energy Efficiency" (FLEC IEE) (adopted in November 2009)) Industry and Power: 1) Introduction of incentives and tax benefits for Russia's heavy industry to replace highly energy inefficient machinery and equipment; 2) Mandatory energy audit and energy and heat efficiency labelling of industrial production, processes, and plants; 3) Technical upgrades of equipment by introducing energy saving and EE technologies; etc. Transport: 1) Mandatory EE labelling of automobile and transportation devices for consumers; 2) Plans to introduce fuel efficiency standards and to encourage replacement of regular gasoline with a more energy-efficient fuel, such as natural gas; 3) Promotion of "eco-driving" educational programs, and 4) Adoption of other energy saving measures and initiatives. Residential, Commercial, and Government: 1) Regular audit and monitoring of energy, heat, and water usage (by installing mandatory meters in existing and new buildings and recording EE data in mandatory energy passports); 2) Phasing out incandescent lighting from 2011 and complete ban on use, sale, and distribution by 2014; 3) Requirements for EE labelling of household appliances, heat-generating units, and construction materials; 4) Enforcement of building codes and mandatory energy passports (i.e. energy and thermal efficiency certificates) for energy-consuming entities, etc. Other: 1) Encouragement of R&D in EE and energy conservation area; 2) Introduction of a long-term tariff system and energy-service contracts; 3) Promotion of awareness-raising and capacity-building programs as well as information dissemination at various levels of Russian society by creating a single and unified federal information network and analytical energy efficiency system; etc.	Establishment of effective administrative and legal mechanisms for effective management and control in monitoring and measuring the program's effects based on data and statistics compilation and trend analysis. Additional monitoring mechanisms include energy efficiency and energy saving surveys and data collection as well as the comparison of the results with the indicative targets or norms established by the 2009 FLEC IEE and related legal acts; mandatory energy audit of buildings (for heat, power, and water usage), energy-intensive equipment and economic entities, and other measures.
Singapore	Reduction of energy intensity of GDP: by 35 %	2030	2005				Measures Industry: 1) Energy Efficiency Improvement Assistance Scheme (EASe) to identify EE potential; 2) Grant for Energy Efficient Technologies (GREET); 3) Investment Allowance (IA) scheme; 4) Design for Energy Efficiency Scheme (DfE) to incorporate EE considerations during conceptual design; 5) Accelerated depreciation allowance scheme; 6) Innovation for Environmental Sustainability (IES) fund; 6) Energy Efficiency National Partnership (EENP) voluntary programme. Transport: 1) Promoting public transport through a series of measures; 2) Green Vehicle rebate to encourage use of hybrid and CNG vehicles; 3) vehicle quota system (VQS); 4) electronic road pricing (ERP); 5) fuel economy labelling; 7) Eco-driving programme; 8) Test-bedding new transport technologies such as diesel hybrid bus; 9) Green Framework for Rapid Transit System (RTS). Commercial Buildings: 1) EASe for Buildings; 2) Energy Smart Building Labelling Programme for energy performance equal to or better than the top 25%; 3) Building Control Regulations standards; 4) Green Mark Scheme; 5) Green Mark Incentive Scheme to encourage higher Green Mark ratings Households: 1) Mandatory energy labelling scheme; 2) Reducing standby power consumption by encouraging households to switch off appliances; 3) Residential Envelope Transmittance Value (RETV) standard; 4) Electricity Vending System (EVS); 5) MEPS for household appliances such as refrigerators and air conditioners. Government: 1) The public sector taking the lead to demonstrate and set example for the private sector; 2) New public sector buildings and existing public sector buildings undergoing major retrofitting works with air-conditioned area more than 5,000m ² would need to attain Green Mark Platinum rating, while existing public sector buildings with air-conditioning area more than 10,000m ² to attain Green Mark Gold ^{PLUS} rating by 2020. Power sector: co-generation and tri-generation, and gas-fired combined cycle gas turbines (CCGTs) power plants.	Programs have inherent methods for monitoring and measuring the effects of measures; other methods include monitoring through survey and capacity building forums.

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Chinese Taipei	Reduction of energy intensity: · by 20 % · by 50 %	2015 2025	2005	Industry: Reducing CO ₂ intensity by 30% in 2025; Transport: Raising new car EE standards by 25% in 2015; Residential and commercial: Improving EE of appliances and devices by 10%-70% in 2011 and raising the EE standard by 2015 by replacing traditional equipment with high efficient products; Government: 10% reduction of overall energy use by 2015		2008	<p>Action plans Energy Conservation and GHG Emission Reduction Action Plan:(1) Raise power generation efficiency;(2)Replace coal-fired power plants with high-efficiency generating units (efficiency raised 7.5% by 2025) and gas-fired power plants (efficiency raised by 11%);(3)Improve power dispatch and transmission facilities (reducing line loss 0.5% by 2015);(4)Raise vehicle energy efficiency standard;(5)Raising private vehicles' standard fuel efficiency incrementally 25% by 2015;(6)LED electricity saving lighting;(7)Traffic signal lamps completely replaced with LED lamps by 2012;(8)Building (exit, fire alarm signal, etc.) and landscape lighting completely replaced with LED lamps by 2025;(9)Promote the uptake of energy efficient appliances;(10)Voluntary energy saving partnership agreement;(11)Energy auditing of major energy consumers.</p> <p>Measures Industry: 1) Voluntary energy saving partnership agreement; 2) Energy auditing of major energy consumers. Transport: 1) Raise vehicle energy efficiency standard; 2) Raising private vehicles' standard fuel efficiency incrementally 25% by 2015; 3) Traffic signal lamps completely replaced with LED lamps by 2012. Residential and commercial: 1) LED electricity saving lighting; 2) Building (exit, fire alarm signal, etc.) and landscape lighting completely replaced with LED lamps by 2025; 3) Promote the uptake of energy efficient appliances; 4) The MEPS and efficiency standards for the following products will be raised- Fluorescent Lamps with embedded ballasts from 2010, Compact fluorescent lamps from 2010, Room air-conditioners and refrigerators from 2011, Dehumidifiers from 2011, and Incandescent lamps from 2012. Power: 1) Raise power generation efficiency; 2) Replace coal-fired power plants with high-efficiency generating units (efficiency raised 7.5% by 2025) and gas-fired power plants (efficiency raised by 11%); 3) Improve power dispatch and transmission facilities (reducing line loss 0.5% by 2015). Government: 1) The FREE Energy Audit started 15 years ago, to assist owners in improving their energy efficiency and to increase energy efficiency by 30% by 2025 in the industrial and commercial sectors; 2) The Government cooperates with non-government organisations to disseminate energy efficiency and energy saving policies. Other: Enhancing EE management through the following measures: 1) Energy utilisation facilities or equipment that are designated by the central competent authority, manufactured by local manufacturers or imported by merchants for domestic use, are to conform to the permit standards of energy consumption established by the central competent authority; 2) Vehicles that are designated by the central competent authority, manufactured by local manufacturers or imported by merchants for domestic use are to conform to the permit standards of energy consumption established by the competent central authority.</p>	<ul style="list-style-type: none"> Measure the sales of energy efficiency appliance monthly Monitor the progress of energy efficiency standard revision quarterly Monitor the result of voluntary energy saving agreement quarterly.
Thailand	25% Energy Intensity of GDP Reduction	2030	2010	Industry: reduce energy consumption by 16,100 ktoe. Transport: reduce energy consumption by 15,100 ktoe. Residential and Commercial: reduce energy consumption by 7,000 ktoe (3,600 ktoe for large commercial building and 3,400 for small commercial building and residential). Total: 38,200 ktoe.	2030	2010	<p>Action plans The EE Strategy aims to increase the EE of all sectors, particularly transport and industry. There have been a number of measures introduced to achieve this goal.</p> <p>Measures Industry: 1) energy management program for designated factories; 2) EE financing; 3) tax incentives; 4) technical assistance; 5) capacity building programs; 6) collaboration with major private corporations (firm commitment and top-down approach); and 7) promotion of the energy service company (ESCO) business. Additional measures: 1) Enforcement of Minimum Energy Performance Standard (MEPS) for the production process; 2) Develop benchmarking system based on energy used per unit of products for major sub-sectors in industry; 3) Promote R&D on high energy-efficiency equipment/appliances with large markets and manufacturing bases in Thailand. Transport: 1) promotion of gasohol to replace gasoline consumption by at least 10% (currently gasohol E10, E20 and E85 are available in the market); 2) promotion of biodiesel production (eight-year tax holidays and exemptions of import duties from major equipment); 3) natural gas for vehicles, or the use of Compressed Natural Gas (CNG), targeting to replace 14.6% of oil consumption in 2014 (with expected NG demand to increase from 229 MMSCFD (averaged Jan-Nov) in 2011 to 317 MMSCFD in 2014); and 4) establishment of tax measures to promote energy-saving vehicles (e.g. ECO cars and FFVs). PTT and the Ministry of Energy have put together a fund of THB 9,000 million, or USD 265 million to provide low-interest loans for conversion costs from LPG to NGV-engines for taxi and fleet corporations. Residential: 1) Minimum Energy Performance Standards (MEPS) for equipment (target 50, actual 11); 2) High Energy Performance Standards (HEPS) for equipment (target 54, actual 8), such as air conditioners, refrigerators, electric fans, chillers, glazing panes, rice cookers, electric water heaters and electric posts; 3) energy labelling program for household appliances and office equipment; 4) promotion of energy efficiency in home design; and 5) public awareness campaigns. Commercial Building: 1) promoting Building Energy Code (BEC); 2) energy management program for designated buildings; 3) energy efficiency labelling for buildings; 4) capacity building programs; 5) EE financing; and 6) promotion ESCO. Power: 1) Demand-Side Management (DSM); 2) Labelling Number 5 Programme.</p>	<p>Methods for monitoring include energy consumption reporting, submission of energy conservation targets and plans of designated facilities, and analysis of energy consumption against energy benchmarks of individual sectors.</p> <p>The outcomes of monitoring involve the evaluation of the overall achievement of individual projects and the strategic plan implementation after a specified time frame, the result of which will be used for improving and developing the strategic plan for another time frame.</p> <p>The main method used for monitoring and evaluation of the action plans is PMQA Method on the following activities: database creation, EE program evaluation, surveys, auditing, statistics (data gathering) benchmarking, diagnostics, end-use information, monitoring, trends analysis, potentials, and others. Several tools have been used together in order to do the monitoring. Those tools are databases, program evaluation, benchmarking, and information surveys.</p> <p>The Department of Alternative Energy Development and Efficiency (DEDE) plays the major role in monitoring and reporting tasks for the industrial sector. Energy Policy and Planning Office (EPPO) monitors residential, transportation and government sectors. The outputs by monitoring are compiled in the annual government report, annual report of Energy Conservation Promotion Fund, and organisation annual report. Financial resources used for monitoring EE projects are allocated from ENCON Fund.</p>
United States	Reduction of energy intensity of GDP by 45%	2035	2005	a) Residential: Reduction of new home energy use by 50% before 2020 b) Commercial: Reduction of new home energy use by 50% before 2020 c) Industry: Reduce energy use in materials and manufacturing processes 50% and a voluntary 25% reduction target in energy intensity by participants (energy/physical output) d) Public: Mandated 30% reduction in energy intensity of federal buildings (energy/floor space) e) Transport: Average fuel economy standards of cars and light trucks to meet 54.5 miles per gallon	a) 2020 b) 2020 c) 10 years d) 2015 e) 2025	2005	<p>Action plans National Action Plan for Energy Efficiency: 1) Recognise EE as a high priority resource; 2) Long-term commitment to implement cost-effective EE; 3) Communicate benefits of EE; 4) Fund programs to deliver EE; 5) Align utility incentives with delivery of cost-effective EE.</p> <p>Measures Residential and Commercial: 1) Building Technologies Program (R&D program); 2) Building energy codes; 3) Appliance MEPS and labelling; 4) EE standards for lighting (phase out most incandescent lights by 2014); 5) Limits on appliance standby power; 6) Energy Star endorsement labelling. Residential: 1) Energy efficient mortgages to finance EE features in new homes; 2) Weatherisation assistance for low-income households. Commercial: 1) Commercial lighting initiative, 2) Better building programme. Industry: 1) Advanced Manufacturing Research and Development (deployment of efficient technologies and R&D on energy conversion and utilisation, on energy-intensive industrial processes, and on resource sustainability and waste minimization); 2) Voluntary agreements with industry; 3) Tax credits for manufacturers of energy efficient appliances. Public: 1) Federal Fleet Petroleum Reduction and Alternative Fuel Use Increase: decrease fleet petroleum consumption by 2% per year and increase alternative fuels use by 10% per year through 2015; 2) Federal Energy Management Program (DOE-private sector efficiency projects for federal agencies); 3) Qualified Energy Conservation Bonds (support state and local governments' efficiency programs); 4) Energy saving performance contracting; 5) Utility energy service contracts. Transport: 1) National corporate average fuel efficiency standards targeting 35.5 mpg by 2016 and 54.5 mpg by 2025; 2) Vehicle Technologies Program (technology deployment and R&D on light vehicle technologies; also, R&D for aviation and for heavy vehicles under the 21st Century Truck Partnership); 3) Limited tax credits for hybrids, electric and diesel vehicles; 4) Various financial incentives for manufacturers of high efficiency vehicles and their components. Power: 1) EE Technology R&D (high-temperature superconductivity (HTS), transmission and distribution, and energy storage); 2) Tax credits for distributed fuel cells and micro turbines. Cross-Cutting: 1) Information campaigns (Powerful Savings Campaign, www.EnergySavingTips.gov, "Easy Ways to Save Energy", Energy Efficiency Public Information Initiative); 2) Low interest loans for energy efficiency improvements 3) Many state and utility loan and subsidy programs exist to promote the adoption of energy efficient technologies.</p>	<p>The National Action Plan for Energy Efficiency relies on self-reporting by stake-holders. The Federal Fleet Petroleum Reduction and Alternative Fuel Use Increase relies on agency self-reporting. The Department of Energy's program activities are tracked in a database showing activities and results; programs are evaluated annually, and program impacts are published. The Department of Energy's Energy Information Administration tracks many EE indicators throughout the economy.</p>
Viet Nam	Reduction of total energy consumption · by 3-5% · by 5-8% (BAU Case)	2010 2015	2006	No sectoral goals			<p>Action plans National Energy Efficiency Program (VNEEP).</p> <p>Measures Industry: 1) Develop EE&C management model in enterprises; 2) Support industrial enterprises to improve, upgrade, and optimise technology. Transport: Optimal use of transportation facilities and equipment by minimising the amount of fuel consumed. Residential: 1) Development of standards and EE labelling for selected products (air conditioners, refrigerators, TFLs, CFLs, ballasts, water heaters, fans, etc.); 2) Providing technical assistance to domestic EE equipment producers. Commercial: 1) Improving capacity for EE&C in building design and management; 2) Development of pilot models and dissemination of EE&C management activities in building operations. Power: Electricity saving program for the period 2006-2010 calls for the reduction of transmission and distribution losses from 12% in 2006 to 9% by 2010. Government: Completion of legislative framework on EE&C (law on EE&C was approved in 2010, regulations on labelling and MEPS); EE&C Office (EECO) at MOIT and EE&C Centres have been established since 2006. Other: 1) Public awareness enhancement on EE&C; 2) Integration of EE&C into the national education system; 3) Development of pilot models for "EE&C in household" movement.</p>	<p>Establishing EE database and carrying out surveys.</p> <p>Each project conducted under VNEEP is being evaluated annually by EECO and reported to the National Energy Efficiency Steering Committee.</p>