

## Summary Table for Compendium of Energy Efficiency Policies of APEC Economies\*

\*While improvement of energy efficiency (EE) can be achieved through a number of means, such as goals to reduce CO<sub>2</sub> emissions, this table focuses on explicit EE goals.

\*\*The following summary table was prepared based on answers to a questionnaire submitted by APEC economies. APERC has not received official answers to the questionnaire from Papua New Guinea (PNG).

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Australia	Overall 20% renewable energy	2020					<p><b>Action plans</b> 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 to come into effect in July 2012.</p> <p><b>Measures</b> <b>Industry:</b> 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. <b>Transport:</b> 1) Fuel consumption labelling standards; 2) Plans to develop a package of measures to improve the fuel efficiency of the Australian vehicle fleet. <b>Residential:</b> 1) Minimum Energy Performance Standards (MEPS) and Labelling for appliances and equipment; Greenhouse and Energy Minimum Standards (GEMS) are to be developed; 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; 5) Phase-in mandatory disclosure of residential building energy, greenhouse and water performance at the time of sale or lease from 2011. <b>Commercial:</b> 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. <b>Power:</b> Generator Efficiency Standards program (in partnership with the Australian Government). <b>Government:</b> Improving the operational performance of buildings leased by the government. <b>Other:</b> 1) National Energy Efficiency Skills Initiative (NEESI) to be introduced in 2010; 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>	Australian Bureau of Statistics collects and publishes energy use statistics. Department of Resources, Energy and Tourism administers the Energy Efficiency Opportunities program where companies report energy efficiency information. ABARE undertakes decomposition analyses for the industry sector. The Department of Environment, Water, Heritage and the Arts monitors residential energy use and the effects of its programs. The Department of Climate Change 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><b>Action Plans</b> A number of measures have been identified to improve energy efficiency performance in five sectors between 2010 to 2030.</p> <p><b>Measures</b> <b>Residential Sector:</b> Electricity tariff revision and meter replacement to encourage consumers to plan their energy use better <b>Power Sector:</b> 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 <b>Residential, Industrial and Government Sectors:</b> Formulation of a national standard and labelling for air conditioning system and lighting <b>Industrial and Government Sectors:</b> Energy Audits to improve energy management <b>Transportation Sector:</b> Introduction of energy efficient vehicles, installation of charging bays across the country</p> <p><b>Other Initiatives</b></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><b>Action plans</b> 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><b>Measures</b> <b>Industry:</b> 1) EcoENERGY Efficiency Initiative for Industry offers Dollars to Sense 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&amp;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. <b>Transport:</b> 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 FleetSmart information campaign and SmartDriver courses; 3) CanmetENERGY conducts R&amp;D on advanced fuels, hybrid, and electric vehicles, and fuel cells; 4) New fuel consumption regulations will be introduced in the 2011 model year. <b>Residential:</b> EcoENERGY Efficiency for Buildings and Houses provides home builders with training to achieve the R-2000 standard or affix an EnerGuide label. <b>Residential and Commercial:</b> 1) EcoENERGY Retrofit provides grants to owners/operators of buildings and houses that perform energy upgrades; 2) CanmetENERGY conducts R&amp;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. <b>Power:</b> Accelerated Capital Cost Allowance (CCA) for Clean Energy Generation allows 50% CCA for projects to use fossil fuels efficiently, including co-generation. <b>Government:</b> Federal Buildings Initiative to promote EE retrofits in government buildings.</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><b>Action plans</b> In 2011 the Chilean Government published the National Energy Strategy.</p> <p><b>Measures</b> <b>Industry:</b> 1) Promotion of EE research and dissemination of results of EE projects as well as evaluation of EE pilot projects, technology development and EE innovation in the mining sector; fostering EE culture within mining companies that are members of the EE Roundtable; 2) Energy Efficiency Pre-investment Program. <b>Transport:</b> 1) Replacement of 350 trucks that have been in use for more than 20 years in accordance with the National Truck Replacement program; 2) Eco-Driving training program started in June 2009, with the aim of training 1,000 drivers by early 2010; 3) Development of an assessment methodology for the implementation of the fuel-economy labelling for vehicles. <b>Residential, Commercial, and Government:</b> 1) Improve EE of residential buildings. Since 2002, the Ministry of Housing and Urbanism (Ministerio de Vivienda y Urbanismo - MINVU) began a process to establish minimum thermal standards for residential buildings. This process consisted of three milestones, two of which have been achieved, such as Thermal Regulations for Roofs (went into effect in March 2000 and included minimum transmittance and thermal resistance requirements) and Building Envelope Regulation (went into effect in January 2007 and was applied to the entire building envelope, including roofs, walls, ventilated floors and windows); and the third, Maximum Energy Demand Regulation for Housing, is currently being developed (it is aimed at regulating maximum energy demand of a housing unit, which is viewed as a whole system rather than the sum of different construction elements); 2) National Light Bulb Replacement program (replacement of 2.9 million incandescent bulbs with compact fluorescent light bulbs); the energy savings of 806 GWh in 4 years are expected; 3) Establishment of minimum energy performance standards for appliances is under way (will first be applied to lighting). Also, Chile has a product labelling program which breaks all similar models of a product into one of seven energy efficiency categories: A (most efficient) through G (least efficient). This has been applied to five products in Chile: incandescent and compact fluorescent light bulbs, one- and two-door refrigerators, microwaves, with another five to six planned in 2011-2012.</p>	The Division of Energy Efficiency and AChEE have established an area of Measurement and Verification. At the macro level, energy statistics are prepared by the Prospective 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. At the project level, the results will be measured based on international methodologies e.g. 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	<b>Buildings:</b> to save 110 million tonnes of coal equivalent in building energy consumption from 2005 to 2010.	2010	2005	<p><b>Action plans</b> "A comprehensive work plan of energy conservation and emission reduction" adopted in June 2007 comprised of various energy-related action plans to achieve the overall energy conservation (EC) target.</p> <p><b>Measures:</b> To achieve overall EC goals, the central government has adopted a series of legal, administrative and economic means to promote EE.</p> <p>1) Legal means: a) Giving priority to EC in the state energy strategy; b) On 1 April 2008, the newly revised "Energy Conservation Law" (which was adopted in 1997 and amended in 2007) formally went into effect, improving the basic system of energy conservation and establishing basic system requirements for energy conservation management ; c) The "Energy conservation regulations for state-funded institutions " formally went into effect on 1 October 2008, calling for state-funded institutions to show leadership by taking an active role in energy management and implementing technically feasible and economically reasonable measures to reduce consumption.</p> <p>2) Administrative means: a) Minimum energy performance standards (MEPS) for high energy consuming products, as well as Fuel Efficiency Standards and Energy conservation basic standards. 46 efficiency standards to support the implement of Energy Conservation Law, 5 vehicle fuel economy standards providing fuel consumption limits and test methods for different types of vehicles and 8 energy conservation basic standards have been set; b) Energy conservation regulations for civil buildings and building energy code. 3 energy efficiency design standards for residential buildings and one for public buildings has been issued; c) Certification for energy-efficient products, covering more than 90 product categories such as appliances, lighting, electronic, office equipment, industrial products, water-saving products, and environmental-friendly products; d) Strengthening the system of energy consumption statistics, which would lay the foundation for the quantitative management of energy consumption data.</p> <p>3) Economic means: a) Tax scheme for EE improvement, including corporate income tax relief, capital gains tax relief, export tax rebates, etc. ("Energy-efficient or water-saving equipment directory of corporate income tax concessions (2008)" has been in effect since 2008); b) Low-interest loans for the national debt projects; c) Interim measures for financial incentive funds for energy efficiency technological transformation projects; d) Subsidy to public for energy efficiency products program, including air conditioners, refrigerators, flat-panel TVs, washing machines, etc.; e) Implementation of Energy performance contracting, reducing the financial and technical risk for users which in turn increases energy users' enthusiasm to promote energy-efficiency; f) Differentiated electricity pricing policy was implemented to limit industrial development of high energy-consuming, high pollution, as well as outdated processes and equipment.</p>	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		2035	2005	N/A	N/A	N/A	<p><b>Action Plans</b> Promotion of Energy Efficiency: 1) The promotion of building energy efficiency through legislation for mandatory implementation of Buildings Energy Codes, and the provision of subsidies under Building Energy Efficiency Funding Schemes; 2) The implementation of the first phase and second phase of the Mandatory Energy Efficiency Labelling Scheme; 3) The provision of incentives in the post 2008 Scheme of Control Agreements with power companies to encourage investment in renewable energy facilities and enhance energy efficiency; 4) To enhance utilisation of landfill gas for town gas production; 5) To implement a district cooling system at the Kai Tak Development to supply chilled water to buildings in the new development area for centralised air-conditioning; 6) To promote environmental protection and energy conservation in government buildings through setting targets in various environmental aspects of new government buildings and through identifying demonstration projects; 7) To promote environmental protection and energy conservation in government buildings through setting targets in various environmental aspects of new government buildings and through identifying demonstration projects to promote the replacement of incandescent light bulbs by more energy-efficient lighting products through various means, including public consultation on the restriction of sale of energy-inefficient incandescent light bulbs.</p> <p><b>Measures</b> <b>Industry:</b> Enhance utilization of landfill gas for town gas production. <b>Transport:</b> 1) To extend the coverage of the energy efficient public transport system, in particular the mass transit railway network and high-speed train system; 2) To implement measures to promote wider adoption of electric vehicles. <b>Commercial &amp; Residential:</b> 1) The Energy Efficiency (Labelling of Products) Ordinance, enacted on 9 May 2008, provides the basis for implementation of the Mandatory Energy Efficiency Labelling Scheme for 19 types of household appliances and office equipment; 2) The Building (Energy Efficiency) Regulation, enacted in 1995; 3) The new Buildings Energy Efficiency Ordinance for mandatory implementation of the Building Energy Code (BEC) and energy audit, enacted in December 2010, will come into full operation on 21 September 2012. <b>Power:</b> 1) Providing incentives in the post-2008 Scheme of Control Agreements with power companies to encourage investment in renewable energy facilities and enhance EE with power companies; 2) Carry out EE&amp;C programs for customers; 3) Launching voluntary compliance guidelines and codes. <b>Government:</b> 1) Installation of Energy Efficiency and Conservation Technologies in Government Facilities for Application Studies; 2) Energy efficiency demonstration projects; 3) Projects funded by the Innovation and Technology Fund, Environment and Conservation Fund and General Research Fund; 3) To mandate that government capital works projects and minor works projects incorporate various energy efficiency features into the projects.</p>	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) <b>Industry sector</b> (for select industries) 15% to 30% b) <b>Commercial building sector</b> electricity savings 25% c) <b>Residential sector</b> 10% to 30%	2030	2005	<p><b>Measures</b> <b>Industry:</b> 1) Public - private partnership energy conservation program (the government provides financing for energy audit in industry); 2) Mandatory implementation of energy saving measures identified in the partnership energy audit; 3) Promotion of commercial financing for investments in energy savings; 4) Mandatory appointment of energy manager in industry for users of final energy of 6000 toe or greater is being developed; 5) Clearinghouse for consultation and exchange of information for industry; 6) Government energy audit in industry in 2011. <b>Transport:</b> 1) Indonesia expects to have minimum fuel efficiency standards in 2012; 2) Mandatory emissions testing for private passenger vehicles and for commercial vehicles are being developed; 3) Indonesia has emissions standard equivalent to Euro II (implemented in 2006) and expects to leap-frog to Euro IV - equivalent emission standards in 2012. <b>Residential:</b> 1) Energy efficient lighting (CFL) program by the government and the state-owned utility (PLN); 2) Electrical appliance EE standards is being developed as mandatory standard; 3) A new energy labelling scheme is being developed; 4) Public awareness and information on residential energy use. <b>Commercial buildings:</b> 1) Public - private partnership energy conservation program (the government provides financing for energy audit in commercial buildings); 2) Mandatory implementation of energy saving measures identified in the partnership energy audit; 3) Promoting commercial financing for investments in energy savings; 4) Energy building standards (currently implemented voluntarily) being developed as mandatory standard; 5) Energy benchmarks for commercial buildings; 6) Participation in the ASEAN Energy Awards program for commercial buildings; 7) Clearinghouse for consultation and exchange of information for commercial buildings; 8) Government energy audit in commercial buildings in 2011. <b>Power sector:</b> Loss reduction program in generation, transmission and distribution implemented by PLN. <b>Government:</b> Government departments and agencies are required to report on their government buildings monthly energy use.</p>	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.

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
Japan				<b>Industry:</b> a) Federation of Electric Power Companies: Reducing CO <sub>2</sub> emissions intensity (emissions per unit of end-user electricity) by an average of approximately 20%; b) Petroleum Association of Japan: Improving CO <sub>2</sub> 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 <sub>2</sub> emissions efficiency by 16%	2008-2012	1990	<b>Action plans for sectoral goals</b> On 17 December 1996, the KEIDANREN presented the Voluntary Action Plan on the Environment. Its goals, such as CO <sub>2</sub> unit goal and EE goal are individually formulated for 36 industries (represented by 137 organisations) in the industrial, commercial, transportation and energy-conversion sectors. <b>Measures</b> <b>Industry:</b> 1) Regulatory measures based on the Energy Conservation Law in order to annually report on conditions of energy use, to prepare and submit medium-term plans to achieve targets, and to assign responsible persons for energy management (in construction business – reporting energy conservation measures to relevant authorities beforehand and periodically, every 3 years); 2) Tax scheme: special depreciation or tax reduction for industrial sector businesses that acquire the specified equipment. <b>Transport:</b> 1) Regulatory measures based on the Energy Conservation Law, including submission of energy conservation plans and reporting on energy consumption amounts; 2) Tax scheme: vehicle greening tax scheme that targets reductions of automobile taxes based on emissions levels and fuel efficiency. <b>Residential:</b> Tax scheme: renovation costs, such as thermal insulation of windows, will be deducted from income tax. <b>Other:</b> 1) Top-Runner Program (regulatory measures) that sets target standard values for energy using machinery and equipment, according to which manufacturers and importers are required to enhance EE of their products; 2) Energy conservation labelling program: providing consumers with the necessary information concerning the EE performance of products covered by the Top-Runner Program; 3) Building code: requirements of EE standards in buildings for non-residential and residential buildings as well as reporting on EE measures and labelling of buildings; 4) Subsidies are available for introduction, as well as promotion of dissemination and development, of energy conservation equipment.	<b>For Sectoral Goals:</b> 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.
Korea	Reduction of energy intensity (TPES/GDP) by 46% (from 0.341 in 2006 to 0.185 in 2030)	2006	2030	<b>Industry:</b> Reduce energy use by 34.4 Mtoe (30.3% reduction from BAU scenario) <b>Transport:</b> Reduce energy use by 12.3 Mtoe (33.5% reduction ) <b>Residential &amp; Commercial:</b> Reduce energy use by 15.5 Mtoe (26.2% reduction) <b>Public &amp; Others:</b> Reduce energy use by 1.9 Mtoe (31.5% reduction)	2030	2007	<b>Action plans</b> 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). <b>Measures</b> <b>Industry:</b> 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.). <b>Transport:</b> Regulated Average Fuel Efficiency (AFE) for passenger cars (2006), eco-driving, and "no car once a week." <b>Residential:</b> Regulated MEPS (2001) and labelling (1992) for appliances (23 items). <b>Commercial:</b> Voluntary building EE rating (2001) and regulated building energy code. <b>Power:</b> Demand side management by energy supplier (1994). <b>Government:</b> 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). <b>Other:</b> 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.	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	<b>Action plans</b> 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; - Reduce rate of depletion of indigenous fuels - Reduce imports of required fuels - Reduce adverse environmental impacts and CO <sub>2</sub> 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).	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 PRONASE: 2009	2012	2012	<b>Energy Saving Goals:</b> 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	<b>Action plans (for overall goals)</b> 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,

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year	Monitoring mechanisms	
New Zealand	Achieve a rate of energy intensity improvement of 1.3 percent per annum	N.A.	N.A.	a) <b>Transport:</b> by 2016, the efficiency of light vehicles entering the fleet has further improved from 2010 levels; b) <b>Business:</b> 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) <b>Residential:</b> by 2013, insulate 188,500 homes. d) <b>Products:</b> by 2016, extend minimum energy performance standards, labelling and EnergyStar product coverage to remain in line with major trading	varies by goal	varies by goal	<u>Action plans</u> New Zealand's EE goals and implementation mechanisms are outlined in the New Zealand Energy Efficiency and Conservation Strategy (NZECS) 2011–2016 . • <b>Information</b> – 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. • <b>Incentives</b> – funding of financial products to help build capability and leverage investment. These include Warm-Up New Zealand: Heat Smart matching grants for home insulation and clean heating devices; Efficient Water Heating Programme to promote uptake of efficient home water heating equipment; 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; Vehicle Fleet Auditing Programme to fund audits and efficiency monitoring for business fleets; Biodiesel Grants Scheme for biodiesel producers which offers grants of up to 42.5 cents per litre for biodiesel or biodiesel content of a biodiesel blend. • <b>Codes and standards</b> – to underpin confidence in energy efficient products and practices. These include Minimum Energy Performance Standards (MEPS) for appliances and equipment; and building energy codes; • <b>Research and development</b> – 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; and the Marine Energy Deployment Fund (MEDF).	The Minister of Energy and Resources is accountable for the overall performance of the strategy. The Ministry of Economic Development (MED) 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.
Papua New Guinea**	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
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: <b>a) Residential</b> - 621 PJ; <b>b) Industry</b> - 518 PJ; <b>c) Commercial and Public</b> - 8 PJ; <b>d) Transport</b> - 1051 PJ; <b>e) Other plans and sectors</b> - 1203 PJ; <b>Total sectoral goal is 3401 PJ of energy demand reduction.</b>	2018	2005	<u>Action plans</u> 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: <u>Measures</u> <b>a) Residential:</b> 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. <b>b) Industry:</b> 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. <b>c) Commercial and public:</b> Main actions are targeted to energy efficiency in buildings, labelling, house appliances, among others. <b>d) Transport:</b> 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	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	<u>Action plans</u> The National Energy Efficiency and Conservation Program (NEECP). <u>Measures</u> <b>Component 1:</b> Social Mobilization, Information, Education and Communication Campaign <b>Component 2:</b> Energy Efficiency Standards and Labelling Program <b>Component 3:</b> Government Energy Management Program (GEMP) <b>Component 4:</b> Energy Management Services/Energy Audits <b>Component 5:</b> Voluntary Agreement Program <b>Component 6:</b> Recognition Award Program <b>Component 7:</b> 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) <b>Component 8:</b> 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) <b>Component 9:</b> 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

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year		Monitoring mechanisms
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.			<p><b>Action plans</b> 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.</p> <p><b>Measures</b> (introduced with the new Federal Law on "Energy Conservation and Increase of Energy Efficiency" (FLEC IEE) (adopted in November 2009))</p> <p><b>Industry and Power:</b> 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.</p> <p><b>Transport:</b> 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.</p> <p><b>Residential, Commercial, and Government:</b> 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.</p> <p><b>Other:</b> 1) Encouragement of R&amp;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.</p>	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				<p><b>Measures</b> <b>Industry:</b> 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.</p> <p><b>Transport:</b> 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).</p> <p><b>Commercial Buildings:</b> 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</p> <p><b>Households:</b> 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 .</p> <p><b>Government:</b> 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<sup>2</sup> would need to attain Green Mark Platinum rating, while existing public sector buildings with air-conditioning area more than 10,000m<sup>2</sup> to attain Green Mark Gold<sup>PLUS</sup> rating by 2020.</p> <p><b>Power sector:</b> co-generation and tri-generation, and gas-fired combined cycle gas turbines (CCGTs) power plants.</p>	Programs have inherent methods for monitoring and measuring the effects of measures; other methods include monitoring through survey and capacity building forums.
Chinese Taipei	Reduction of energy intensity: · by 20 % · by 50 %	2015 2025	2005	<p><b>Industry:</b> Reducing CO<sub>2</sub> intensity by 30% in 2025; <b>Transport:</b> Raising new car EE standards by 25% in 2015; <b>Residential and commercial:</b> 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; <b>Government:</b> 10% reduction of overall energy use by 2015</p>		2008	<p><b>Action plans</b> 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><b>Measures</b> <b>Industry:</b> 1) Voluntary energy saving partnership agreement; 2) Energy auditing of major energy consumers.</p> <p><b>Transport:</b> 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.</p> <p><b>Residential and commercial:</b> 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.</p> <p><b>Power:</b> 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).</p> <p><b>Government:</b> 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.</p> <p><b>Other:</b> 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"> <li>· Measure the sales of energy efficiency appliance monthly</li> <li>· Monitor the progress of energy efficiency standard revision quarterly</li> <li>· Monitor the result of voluntary energy saving agreement quarterly.</li> </ul>

Economy	Overall goals	Goal year	Base year	Sectoral goals	Goal year	Base year		Monitoring mechanisms
Thailand	25% Energy Intensity of GDP Reduction	2030	2005	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).	2011	2005	<p><b>Action plans</b> 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><b>Measures</b> <b>Industry:</b> EE Programs for the industry sector include 1) Promotion of energy management; 2) Revolving funds for EEs (low-interest funds for EE investments); 3) Tax incentives; 4) Technical assistance; 5) Standards and regulations; 6) Collaboration with major private corporations (firm commitment and top-down approach); 7) Promotion of the Energy Service Company (ESCO) Business. Additional measures are: 1) Speeding up industry structural reform; 2) EE awareness programs and campaigns; 3) Knowledge and information dissemination; 4) Capacity building programs; 5) Competitions for best practices in energy conservation. <b>Transport:</b> 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); 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. <b>Residential:</b> 1) Minimum Energy Performance Standards (MEPS) for equipment (target 50, actual 11); 2) High Energy Performance Standards (HEPS) for equipment (target 54, actual 8), for example for air conditioners, refrigerators, ballasts, fluorescent lamps and compact fluorescent lamps; 3) Energy labelling program for appliances and houses; 4) Promotion of energy efficiency in home design; 5) Public awareness campaigns. <b>Power:</b> 1) Demand-Side Management (DSM); 2) Number 5 labelling programs. <b>Others:</b> Factories and commercial buildings which have a peak demand of not less than 1000 kW or consume not less than 20 million MJ per year in energy become “designated facilities” by law. They have the obligations to appoint Persons Responsible for Energy (PRE) and implement the Energy Management System according to the guideline prescribed by DEDE. By implementing the Energy Management System for all designated buildings and factories, a reduction of energy consumption of around 5-10% is expected.</p>	Thailand has adopted the PMQA Method, which includes: maintaining a database, EE program evaluation, conducting surveys and audits, statistics, benchmarking, diagnostics, end-use information, monitoring, trend analysis, etc. The Department of Alternative Energy Development and Efficiency (DEDE) plays a major role in monitoring and reporting on EE activities in the industry sector. The Energy Policy and Planning Office (EPPO) is in charge of monitoring the residential, transport, and government sectors. The results of monitoring activities are published in annual government reports, annual reports of the Energy Conservation Promotion Fund, and annual organisation reports. EE monitoring activities are financed by the ENCON Fund.
United States	Reduction of energy intensity of GDP by 45%	2035	2005	<p>a) <b>Residential:</b> Reduction of new home energy use by 50% before 2020 b) <b>Commercial:</b> Reduction of new home energy use by 50% before 2020 c) <b>Industry:</b> Reduce energy use in materials and manufacturing processes 50% and a voluntary 25% reduction target in energy intensity by participants (energy/physical output) d) <b>Public:</b> Mandated 30% reduction in energy intensity of federal buildings (energy/floor space) e) <b>Transport:</b> Average fuel economy standards of cars and light trucks to meet 54.5 miles per gallon</p>	a) 2020 b) 2020 c) 10 years d) 2015 e) 2025	a) benchmark energy use b) benchmark energy use c) varies by participant d) 2005 e) NA	<p><b>Action plans</b> 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><b>Measures</b> <b>Residential and Commercial:</b> 1) Building Technologies Program (R&amp;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. <b>Residential:</b> 1) Energy efficient mortgages to finance EE features in new homes; 2) Weatherisation assistance for low-income households. <b>Commercial:</b> 1) Commercial lighting initiative, 2) Better building programme. <b>Industry:</b> 1) Advanced Manufacturing Research and Development (deployment of efficient technologies and R&amp;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. <b>Public:</b> 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. <b>Transport:</b> 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&amp;D on light vehicle technologies; also, R&amp;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. <b>Power:</b> 1) EE Technology R&amp;D (high-temperature superconductivity (HTS), transmission and distribution, and energy storage); 2) Tax credits for distributed fuel cells and micro turbines. <b>Cross-Cutting:</b> 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>	The National Action Plan for Energy Efficiency relies on self-reporting by stakeholders. 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.
Viet Nam	Reduction of total energy consumption · by 3-5% · by 5-8% (BAU Case)	2010 2015	2006	No sectoral goals			<p><b>Action plans</b> National Energy Efficiency Program (VNEEP).</p> <p><b>Measures</b> <b>Industry:</b> 1) Develop EE&amp;C management model in enterprises; 2) Support industrial enterprises to improve, upgrade, and optimise technology. <b>Transport:</b> Optimal use of transportation facilities and equipment by minimising the amount of fuel consumed. <b>Residential:</b> 1) Development of standards and EE labelling for selected products (air conditioners, refrigerators, CFLs, ballasts, water heaters, fans, etc.); 2) Providing technical assistance to domestic EE equipment producers. <b>Commercial:</b> 1) Improving capacity for EE&amp;C in building design and management; 2) Development of pilot models and dissemination of EE&amp;C management activities in building operations. <b>Power:</b> 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. <b>Government:</b> Completion of legislative framework on EE&amp;C (law on EE&amp;C was approved in 2010, regulations on labelling and MEPS); EE&amp;C Office (EECO) at MOIT and EE&amp;C Centres have been established since 2006. <b>Other:</b> 1) Public awareness enhancement on EE&amp;C; 2) Integration of EE&amp;C into the national education system; 3) Development of pilot models for “EE&amp;C in household” movement.</p>	Establishing EE database and carrying out surveys.  Each project conducted under VNEEP is being evaluated annually by EECO and reported to the National Energy Efficiency Steering Committee.