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Economy Update for Chinese Taipei

**42nd Meeting of the APEC
Expert Group on Energy Efficiency & Conservation**

**Chinese Taipei
Nov. 11, 2013**

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**Update of Mandatory and Voluntary
Energy Efficiency management Programs
in Chinese Taipei**

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Minimum Energy Performance Standard (MEPS)

- Mandatory minimum energy performance standards (MEPS) is the main regulatory tool used for energy efficiency. **Manufacturers and importers** are obliged to apply in advance for compliance certification.
- In Chinese Taipei, MEPS was first introduced in 1980's, and have been **updated over the years** to cover a wide range of products, and increasing levels of stringency. The MEPS of **LED bulb**, **Electric Pot** and **Electric Storage Water Heater** will enter into force in 2014 and 2015 respectively.

Effective Year	Categories	New Criteria Effective Date
1987/.../2004	Automobile & motorcycle	Aug. 2009
2001	Fluorescent lamps	--
1981/.../2007	Non-ductive Air-Conditioners	Stage1 : Jan. 1, 2011 Stage2 : Jan. 1, 2016
2002	1 & 3 phased Induction motors	--
1984/.../2003	Refrigerators	Jan. 1, 2011
2007	Self-ballasted fluorescent lamps	Jan. 1, 2010
2009	Ballast	Mar.1, 2009
2010	Compact fluorescent lamps	Jan. 1, 2010
2011	Dehumidifiers	Mar.1, 2011
2012	Incandescent bulb	Jan. 1, 2012
2014	LED bulb	July 1, 2014
2015	Electric Pot	Jan. 1, 2015
2015	Electric Storage Water Heater	July 1, 2015

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Energy Efficiency Ranking Labeling

- To provide the consumers useful information when they choose among various models.
- To influence consumers' purchasing decisions to lead the product importers or manufacturers will likely take actions to improve energy efficiency of their products and to phase out low energy-efficient ones.
- Currently, there are **7,955**air conditioner models, **1,153**refrigerator models, **5,245** automobile models and **1,161** motorcycle models, **240** dehumidifier models and **1,642**CFL models **3,200**Gas Stoves models and **2,964**Instantaneous Gas Water Heaters models have completed mandatory energy label applications.

Effective Year	Categories
2010	Non-ductive Air-Conditioners
2010	Refrigerators
2010	Automobile
2010	Motorcycle
2011	Dehumidifiers
2011	Self-ballasted fluorescent lamps
2012	Gas Stove and Instantaneous Gas Water Heater
2015	Electric Pots • Electric Storage Water Heater

air conditioner

automobile

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Achievements of EE Rating Labeling Program

- ✓ **RAC** :
The rating 1 products are 37% more efficient than rating 5 products
- ✓ **Refrigerator** :
The rating 1 products are 40% more efficient than rating 5 products
- ✓ **Dehumidifier** :
The rating 1 products are 28% more efficient than rating 5 products
- ✓ **Self-Ballasted Fluorescent Lamp** :
The rating 1 products are 30%~40% more efficient than rating 5 products
- ✓ **Gas Stove**
The rating 1 products are 25% more efficient than rating 5 products
- ✓ **Instantaneous Gas Water Heater**
The rating 1 products are 22% more efficient than rating 5 products

■ **Market Transformation of RAC and Refrigerator (2010~2012) :**

Market Share of Each Rating Air Conditioners

E.E. Rating	2010	2011	2012
5	61.8%	32.9%	1.3%
4	15.3%	28.5%	26.2%
3	8.1%	7.2%	7.4%
2	17.7%	6.4%	7.4%
1	7.4%	13.6%	23.8%

Market Share of Each Rating Refrigerator/Freezer

E.E. Rating	2010	2011	2012
5	86.1%	20.0%	0.2%
4	6.5%	30.8%	1.2%
3	4.3%	27.9%	29.2%
2	0.8%	4.5%	8.9%
1	2.3%	15.6%	49.5%

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Voluntary Energy Conservation Labeling Program

Benchmarks for Energy Label Products(44 product Categories)

Year	Categories
2001	(1)air-conditioners (2) refrigerators (3) dehumidifiers (4) clothes dryers
2002	(5)TVs (6) clothes washers (7) electric fans, (8) fluorescent lamps (≥ 32 W)
2003	(8) fluorescent lamps (<32W) (9)hair dryers (10) hand dryers
2004	(11)warm-hot water dispensers (12) chilled-warm-hot water dispensers
2005	(13) chilled-warm-hot drinking fountains (14) automobiles & light trucks (15) m otorcycles (16) self-ballasted fluorescent lamps
2006	(17) thin film transistor-liquid crystal display (18) instant gas burning water heat ers (19) gas burning cooking appliances (20) electric rice cookers
2007	(21)Electric Storage Water Heaters (effective on Jan. 1, 2008)(22) Electric Pots (2 3) Exit Lights and Emergency Direction Lights(24) DVD Products
2008	(25)Warm-hot drinking fountains (26) Luminaries (27) Integrated Stereo
2009	(28)Compact Fluorescent Lamp
2010	(29)Printer
2011	(30) Copier (31) Air Cleaner (new) (32) street lighting (33)Ventilating Fan for B ath Room (34) Window Type Ventilating Fan
2012	Desk top PC(35) Notebook PC(36) Heat pump water heater(37)Range Hoods(38)
2013	Microwave oven(39) Axial fans(40) Centrifugal fans(41) Ballast for fluorescent Tubes (42) Electric stove(43) Electric Drinking Water Heater(44)

7,350 Energy Conservation Labeling certified models with **365** brand names and over **160 million** Energy Conservation qualified models have been used by Oct . 29, 2013

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Public awareness, Education & Promotion

■ Public awareness reach **89.3%** in 12 years. ■ 40th APEC EGEE&C Meeting & Work Shop

Year	ever heard	never heard
2007	52.6%	47.4%
2008	60.4%	39.6%
2009	75.7%	24.3%
2010	80.9%	19.1%
2011	84.6%	15.4%
2012	89.3%	10.7%

Energy Saving Promotion 2012 Energy Saving Promotion worked with Tai-Power Energy label product Promotion worked with the manufacturers and importers 2012

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Current Status of Vehicle's Fuel Economy and CO₂ Control Regulations in Chinese Taipei


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Vehicles Fuel Economy Standards

1980 Promulgated the “Energy Management Law”

Article 15 of the “Energy Management Law”:
Vehicles which are designated by the central competent authority, manufactured by local manufacturers or imported by importers should compliance with the energy economy standards and fuel efficiency rating labeling requirements that governed by the central competent authorities.
Vehicles failed to comply with the fuel economy standards and labeling requirements should be prohibited from importing, demonstration or selling on domestic market.



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Vehicles Fuel Economy Standards

1982 Since 1982, as the vehicle fuel consumption control competent authority, the Bureau of Energy has started **researches** and **capacity building** such as: survey on world fuel efficiency regulations; established related **test facilities** and technologies; set up fuel economy standards and its operational processes.

1988 The “Fuel Economy Standards and Regulations on Vehicle Inspection and Administration” has been implemented since 1988, the related measures include: **requirements on vehicle certification tests** and **new vehicle conformity audit tests**; simplification on vehicle type classifications; **certification and license plate application procedures**; issuance of vehicle fuel economy guide.

Currently the Chinese Taipei government is continuous working on the standards' subsequent amendments.

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Vehicles Fuel Economy Standards

- In Chinese Taipei, vehicle failed to comply with the fuel economy standards is prohibited from importing, demonstration or selling on the market. The target limits of the fuel economy standards are classified by different ranges for basis parameter to achieve maximum control effectiveness and minimum impacts on vehicle manufacturers and importers.
- The preliminary fuel economy classifications were based on **vehicle weights**, during the implement process the authority has found that in order the comply with the standards, some vehicle type approval applicants has added extra weight to get their vehicles applicable to less stringent standards. Being reviewed and discussed with vehicle manufacturers and importers, the basis for the fuel economy standards is **modified to engine displacement** which is harmonized with **vehicle registration and fuel tax fees**.

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Vehicles Fuel Economy Standards

- The Executive Yuan has approved the “Framework of Chinese Taipei’s Sustainable Energy Policy” in 2008, held the National Energy Conference in 2009 and proposed a 25% increase on the fuel efficiency for new personal vehicles. (In 2010 a **10 % improvement** has been set; **another 15%** will be set forth in 2015).

耗能標準 (km/l) 排氣量 (cc)	轎式或休旅式 (km/l)		小貨、小客貨及非轎式/非旅行式客車 (km/l)		耗能標準 (km/l) 排氣量 (cc)	機器腳踏車
	美國行車型態	歐盟行車型態	美國行車型態	歐盟行車型態		
1200以下	16.2	14.1	10.9	9.5	50以下	48.2
超過1200至1800	13.0	11.3	9.9	8.6	超過50 ~ 100	40.6
超過1800至2400	11.4	9.9	8.9	7.7	超過100 ~ 150	38.0
超過2400至3000	10.0	8.7	8.6	7.5	超過150 ~ 250	28.0
超過3000至3600	9.2	8.0	7.6	6.6	超過250 ~ 500	21.1
超過3600至4200	8.5	7.4	7.0	6.1	超過500 ~ 750	16.6
超過4200至5400	7.2	6.3	6.7	5.8	超過750 ~ 1000	15.8
超過5400	6.5	5.7	6.1	5.3	超過1000 ~ 1400	14.7
					超過1400	13.1

- The EPA of Chinese Taipei has invited domestic vehicle manufacturers and importers to discuss issues on the CO₂ control regulations for passenger cars in 2011.

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Global Comparison of Light-Duty Vehicle Fuel Economy/ GHG Emissions Standards (reference ICCT 2011)

Country or Region	Target Year	Standard Type	Unadjusted Fleet Target/Measure	Structure ***	Targeted Fleet	Test Cycle
U.S. / California (enacted)	2016	Fuel Economy/ GHG	34.1 mpg* or 250 g CO ₂ /mi	FP-based corporate avg.	Cars/Light trucks	U.S. combined
U.S. (Notice of Intent)	2025	Fuel Economy/ GHG	43-56 mpg* or 190-143 g CO ₂ /mi	FP-based corporate avg.	Cars/Light trucks	U.S. combined
Canada (enacted)	2016	GHG	153 (141)** gCO ₂ /km	FP-based corporate avg.	Cars/Light trucks	U.S. combined
EU (enacted) EU (proposed)	2015 2020	CO ₂	130 gCO ₂ /km 95 gCO ₂ /km	Weight-based corporate avg.	Cars/SUVs	NEDC
Australia (voluntary)	2010	CO ₂	222 gCO ₂ /km	Fleet average	Cars/SUVs/Light commercial vehicles	NEDC
Japan (enacted)	2015	Fuel Economy	16.8 km/L	Weight-class based corporate avg.	Cars	JC08
China (proposed)	2015	Fuel Consumption	7 L/100km	Weight-class based per vehicle and corporate avg.	Cars/SUVs	NEDC
South Korea (proposed)	2015	Fuel Economy/GHG	17 km/L or 140 gCO ₂ /km	Weight-based corporate avg.	Cars/SUVs	U.S. combined
Chinese Taipei (enacted) Chinese Taipei (proposed)	2010 2015	Fuel Economy	Limit Standards will be expected to increase 15% in 2015.	Engine Displacement - class average	Cars/SUVs, Light duty trucks	U.S. combined, or NEDC

* Assumes all manufacturers take advantage of A/C credit.
** In April 2010, Canada announced a target of 153 g/km for MY2016. Value in brackets is estimated target for MY2016, assuming that during 2008 and 2016 the fuel efficiency of the light-duty fleet in Canada will achieve a 5.5% annual improvement rate (the same rate as the U.S.). This estimate is used in the accompanying charts.
*** FP: footprint.

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