

## Tax Measure to Promote Using E85 Cars : FFV *(Currently Effective)*

Tax Privilege	Cylinder Capacity C.C.	Other Cars	E85 Car (FFV)	Eco Car	Hybrid	NGV Car
<b>Exemption of Import Duty for Engine, Equipment and Autoparts</b>  <i>(by the Customs Department)</i>		–	?	–	?	0%
<b>Excise Tax Rates</b>  <i>(by the Excise Department)</i>	Not over 1,300	}	–	<b>17%</b>	–	–
	Not over 2,000		30%	<b>25%</b>	–	–
	2,001-2,500		35%	<b>30%</b>	–	<b>10%</b>
	2,501-3,000		40%	<b>35%</b>	–	–
<b>Exemption of Income Tax for Juristic Person</b>  <i>(by the Revenue Department)</i>		–	–	<b>8 yrs</b>	<b>Exempt 5-6 yrs (invest &gt;10,000 and &gt;15,000 mBt)</b>	<b>8 yrs (Engine, equipment &amp; autopart Makers)</b>

# Proposed Measure on New Excise Tax for E85 Cars (FFV)

Tax Privilege	Cylinder Capacity C.C.	Other Cars	E85 Car (FFV)	Eco Car	Hybrid	NGV Car
<b>Exemption of Import Duty for Engine, Equipment and Autoparts</b> <i>(by the Customs Department)</i>		-	?	-	?	0%
<b>Excise Tax Rates</b> <i>(by the Excise Department)</i>	Not over 1,300	} 30%	-	17%	-	-
	1,780 - 2,000		35%	22%	-	-
	2,001 -2,500	40%	27%	-	10%	
	2,501 -3,000		32%	-	-	
<b>Exemption of Income Tax for Juristic Person</b> <i>(by the Revenue Department)</i>		-	-	8 yrs	Exempt 5-6 yrs (invest >10,000 and >15,000 mBt)	8 yrs (Engine, equipment & autopart Makers)

# Proposal Summary for Cabinet Consideration

Item	Present ( percent)	Proposal ( percent)
<b>1. Excise Tax</b> E85 cars (FFV) at cylinder capacity * from 1,780 c.c. upto not over 2,000 c.c. * over 2,000 c.c. upto not over 2,500 c.c. * over 2,500 c.c. upto not over 3,000 c.c.	25 30 35	<b>Require the Ministry of Finance to reduce the excise tax by 3 percent</b> 22 27 32
<b>2. Import Duty</b> * E85 car (FFV) at cylinder capacity from 1,780 c.c. upto not over 3,000 c.c. * Imported autoparts for E85 car (FFV)	80	* Reduce the import duty from 80 % to 60 % for 1 year to the car at not over 2,000 cars counting from the day the law takes effect * Assign the Ministry of Finance to speed up establishing the Notification Re: Exemption on Import Duty of the Autoparts for E85 Cars
<b>3. Compensation for Excise Tax</b> paid by the Oil Fund	3	<b>Assign the Energy Ministry to repeal Compensation from the day the New Excise Law (item 1) takes effect</b>

# Balance of Cassava for Food and Ethanol

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Planting Area</b> (m.rai)	7.5	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
<b>Average Yield per rai</b> (t/rai)	3.05	3.40	3.40	3.40	3.40	3.60	3.60	3.80	3.80	3.80	4.00	4.00	4.00
<b>Yield</b> (mt)	22.88	24.48	24.48	24.48	24.48	25.92	25.92	27.36	27.36	27.36	28.80	28.80	28.80
<b>Cassava for Producing Ethanol</b> (mt)	2.27	3.18	4.51	5.58	7.06	8.70	9.98	12.20	14.78	15.15	15.51	16.06	16.43
<b>Cassava for Domestic Consumption</b> (mt)	9.18	9.27	9.36	9.46	9.55	9.65	9.74	9.84	9.94	10.04	10.14	10.24	10.34
<b>The Rest for Exporting</b> (mt)	11.43	12.03	10.61	9.44	7.86	7.58	6.19	5.32	2.64	2.17	3.15	2.50	2.03

**Source:** Data in 2010 are of the reference from the Office of Economic Agriculture  
Yield per rai in the year 2011-2022 are estimated figures

# Balance of Molasses for Food and Ethanol

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Sugarcane Planting Area</b> (m.rai)	6.9	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
<b>Average Yield per rai</b> (t/rai)	10.39	11.00	11.00	11.20	11.20	11.20	11.30	11.30	11.40	11.40	11.50	11.50	11.50
<b>Sugarcane Yield</b> (mt)	71.69	79.20	79.20	80.64	80.64	80.64	81.36	81.36	82.08	82.08	82.80	82.80	82.80
<b>Molasses Yield</b> (mt)	3.23	3.56	3.56	3.63	3.63	3.63	3.66	3.66	3.69	3.69	3.73	3.73	3.73
<b>Molasses for Producing Ethanol</b> (mt)	1.54	2.16	2.04	2.04	2.06	1.97	2.26	2.07	1.77	1.82	1.86	1.93	1.97
<b>Molasses for Domestic Consumption</b> (mt)	1.30	1.31	1.32	1.34	1.35	1.36	1.38	1.39	1.40	1.42	1.43	1.44	1.46
<b>The Rest for Exporting</b> (mt)	0.39	0.09	0.20	0.24	0.22	0.30	0.02	0.20	0.52	0.46	0.43	0.36	0.29

Source: The Office of Cane and Sugar Board

Yield per rai in the year 2011-2022 are estimated figures

## E85 Cars Release Pollutants 2.5 -6 times Less than Standards

Pollutant	TIS 2160-2546	Pollution (g/km)				
		Benzene 95*	E10	E20	E50	E85
THC	0.20	0.14	0.09	0.06	0.08	0.05
NO <sub>x</sub>	0.15	0.08	0.09	0.08	0.07	0.06
CO	2.30	1.03	0.76	0.74	0.64	0.37
CO <sub>2</sub>	—	246.15	192.73	200.13	191.08	185.82
Formuldihyde **	—	0.44 mg/km				
Acetaldehyde **	—	0.19 mg/km	0.54-0.6 mg/km	0.54-0.6 mg/km	1.29-2.28 mg/km	4.3-8.4 mg/km

Source :

Research and Technology Institute, PTT (Wangnoi)

\* the Pollution Control Department (PCD)

\*\* Pollutant -- Air Toxics released from engine is not yet legally enforced or no investigation criteria

## Oil Consumption by Car

	ULG95	E10	E20	E85	NGV	LPG	Eco Car (UGR91)	Hybrid (E10)
<b>Oil Retailed Price (baht/l)</b>	42.99	33.74	31.44	19.82	8.5	11	37.37	33.74
<b>Consuming Rate (km/l)</b>	12.4 <sup>a</sup>	11.99 <sup>b</sup>	11.66 <sup>b</sup>	8.99 <sup>a</sup>	12.82 <sup>b</sup>	7.68 <sup>b</sup>	20	10.30*
<b>Cost (baht/km)</b>	3.45	2.81	2.70	2.21	0.66	1.43	1.87	3.28

**Note:** Oil Prices at the date of 6<sup>th</sup> April 2010

a. Test Result from PCD (the Pollution Control Department)

b. As from Heat Value Comparison

\* As from Actual Test of 12 Hybrid Cars dated 20<sup>th</sup> August 2009

## Government loss in Tax Revenue from E85 Car

Capacity of Car	Type	Excise Tax Rate (percent)	Excise Tax + Interior Ministry + Value Added (baht/car)	Reduce from General car (baht/car)
1,780-2,000 c.c.	Gen. car	30	340,299	
	E20 car	25	271,241	-69,057
	E85 car	22	238,734	-101,565
	Eco car			
	Hybrid			
2,001-2,500 c.c.	Gen. car	35	671,033	
	E20 car	30	541,493	-129,540
	E85 car	27	478,718*	-192,314
	Eco car			
	Hybrid	10	271,718	-400,021
2,501-3,000 c.c.	Gen. car	40	1,691,196	
	E20 car	35	1,373,878	-317,318
	E85 car	32	1,215,855	-475,371
	Eco car			
	Hybrid			

**Government loss in Tax Revenue from E85 Cars accounting to  
25.4-118.8 million baht/month at a total sale of E85 cars by 250 cars/month**

\* an estimated value because no manufacturing of this car model at the present

## Ethanol Production

	Raw Material/ Feedstock	Be operated-Process running	
		No. of Plants	Production Capacity (ml/day)
1	Molasses/Sugarcane	9	1.30
2	Cassava	4	0.63
3	Molasses/Starch/ Cassava	6	1.00
	<b>Total</b>	<b>19</b>	<b>2.93</b>

Year 2010

- \* Additional 4 plants are being constructed at total capacity of 1.62 ml/day
- \* Total production capacity in 2010 = 23 plants with a total capacity of 4.55 ml/day

**note:** as Update of March 2010

# Benefits Gain

Beneficiary	Benefits Gain
1. World Community	* Reduce CO <sub>2</sub> Release by <b>27.8</b> mt
2. the Country--Thailand	* Reduce benzene use by <b>386,720</b> m baht * * Create the value added by production sectors of <b>60,657</b> m baht # } <b>Accumulated up to 2018 **</b>
3. People / Farmers	* Existing of energy marget to support demand on sugarcane and cassava * Agro-products are stabilised * Farmers as of <b>701,000</b> households get more income ✓ sugarcane <b>189,000</b> households ✓ cassava <b>512,000</b> households * Reduce traveling cost ✓ Cars fueled by E85 cost <b>2.14</b> baht/km ✓ Cars fueled by E20 cost <b>2.72</b> baht/km
4. Ethanol Industry	* Run the machine at increasing full load (from previous in 2010 would run the machine at average of 30 %)

Source: \* benzene averaged price is at 30 baht/l

# calculation result is from NESDB

\*\* Cabinet resolution dated 19 Nov 2008 Re: Promote Using the E85 as the National Agenda