
MALAYSIA UPDATE ON ENERGY EFFICIENCY



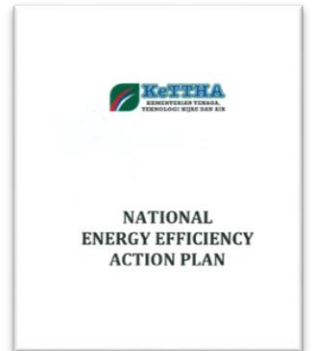
NATIONAL ENERGY EFFICIENCY ACTION PLAN (NEEAP)



BACKGROUND

NATIONAL ENERGY EFFICIENCY ACTION PLAN (NEEAP), 2016-2025

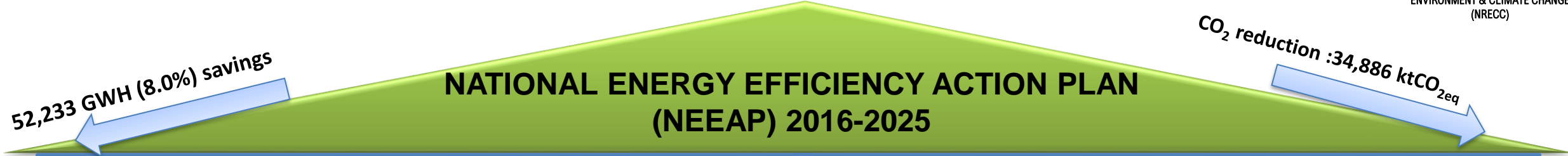
- ❑ Approved by Cabinet on 6 January 2016
- ❑ With estimated budget of RM543 million for 10 years (2016-2025) to implement initiatives and programs outlined under



NEEAP POLICY DIRECTION

Promote Energy Efficiency To Ensure Productive Use of Energy and Minimize Waste In Order To Contribute To Sustainable Development and Increased Welfare And Competitiveness

OVERVIEW



 <p>Strategic Thrust 1 : Implementation of Energy Efficiency Plan</p>	 <p>Strategic Thrust 2 : Strengthen Institutional Framework, Capacity Development and Training for Implementation of EE Initiatives</p>	 <p>Strategic Thrust 3 : Establishment of Sustainable Funding Mechanisms To Implement Energy Efficiency Initiatives</p>	 <p>Strategic Thrust 4 : Promotion of Private Sector Investment in Energy Efficiency Initiatives</p>
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NEEAP KEY INITIATIVES

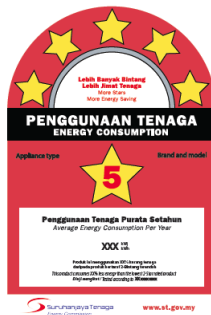
Equipment Programme Initiative	Industrial Programme Initiative	Buildings Programme Initiative
<ol style="list-style-type: none"> Promotion of 5-Star Rated Appliances Minimum Energy Performance Standards (MEPS) 	<ol style="list-style-type: none"> Energy Audits and Energy Management in Industries Promotion of Co-generation 	<ol style="list-style-type: none"> Energy Audits and Energy Management in Buildings Energy Efficient Building Design

NEEAP KEY INITIATIVES POTENTIAL SAVING

Promotion of 5-Star Rated Appliance



- Star energy rating of appliances and mandatory labelling.
- Promotion of 5-star appliance
 - 5-Star Refrigerator Campaign
 - 5-Star Air Conditioner Campaign
- Potential Saving From Refrigerator Campaign = 2,706GWh in 10 yrs
- Potential Saving From Air Conditioner Campaign = 7,014GWh in 10 yrs



Minimum Energy Performance Standards (MEPS)



- Review of MEPS
- Promotion of Efficient Lighting
 - EE lighting Campaign
 - Potential Saving = 2,216GWh in 10 yrs
- Development of MEPS for new equipments and appliances
 - High Efficiency Motors
 - Potential Saving = 2,175GWh in 10 yrs



Energy Audits and Energy Management in Buildings and Industries

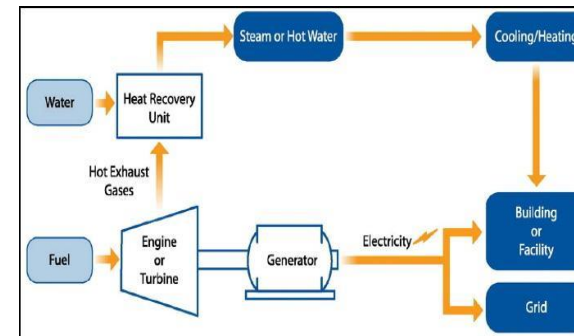


- Facilitating energy audits and implementation of energy saving measures and energy management initiatives
- Energy Audit and management in Large Commercial Buildings
- Energy Audit and management in Medium Commercial Buildings
- Energy Audit and management in Large & Medium Industries
- Energy Audit Government Facility
- Total Potential saving = 34,819GWh in 10 yrs

Cogeneration



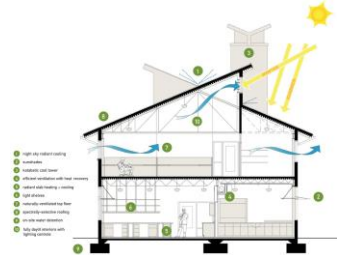
- Promotion of cogeneration through the removal of barriers
- Cogeneration in Industries and commercial buildings
 - Potential saving = 3,150GWh in 10 yrs



Energy Efficient Building Design

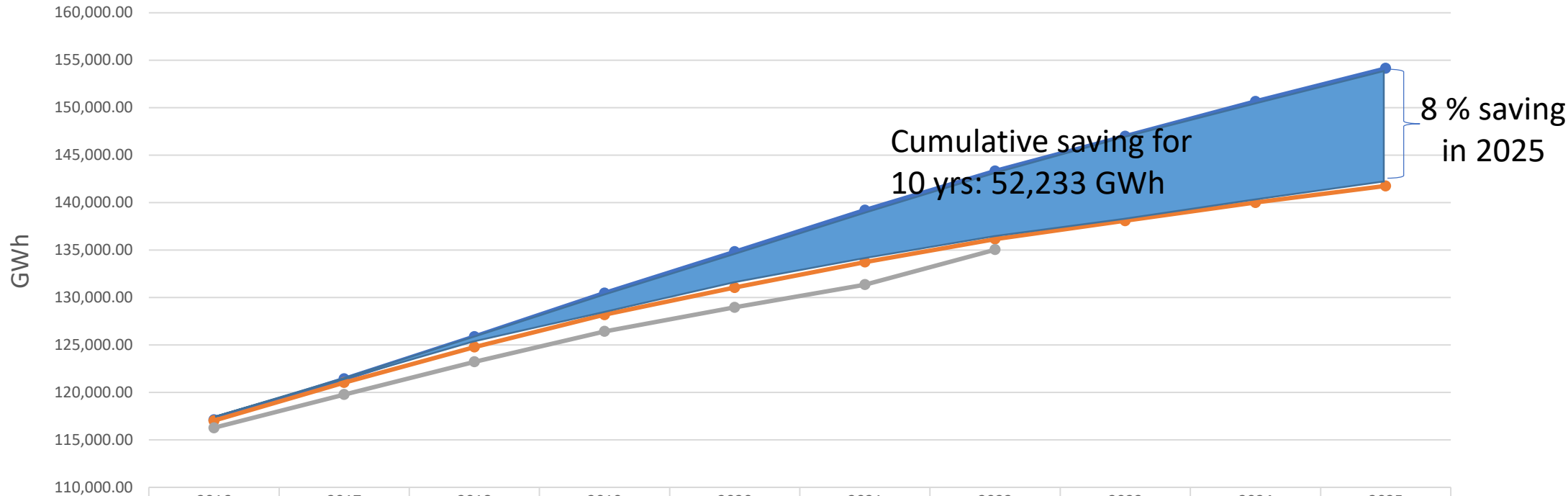


- Incorporating Energy Efficiency in new building designs and constructions
- Potential saving = 15GWh in 10 yrs



Current Annual Saving Achievement (2016 -2022)

NEEAP Plan, NEEAP Actual VS BAU

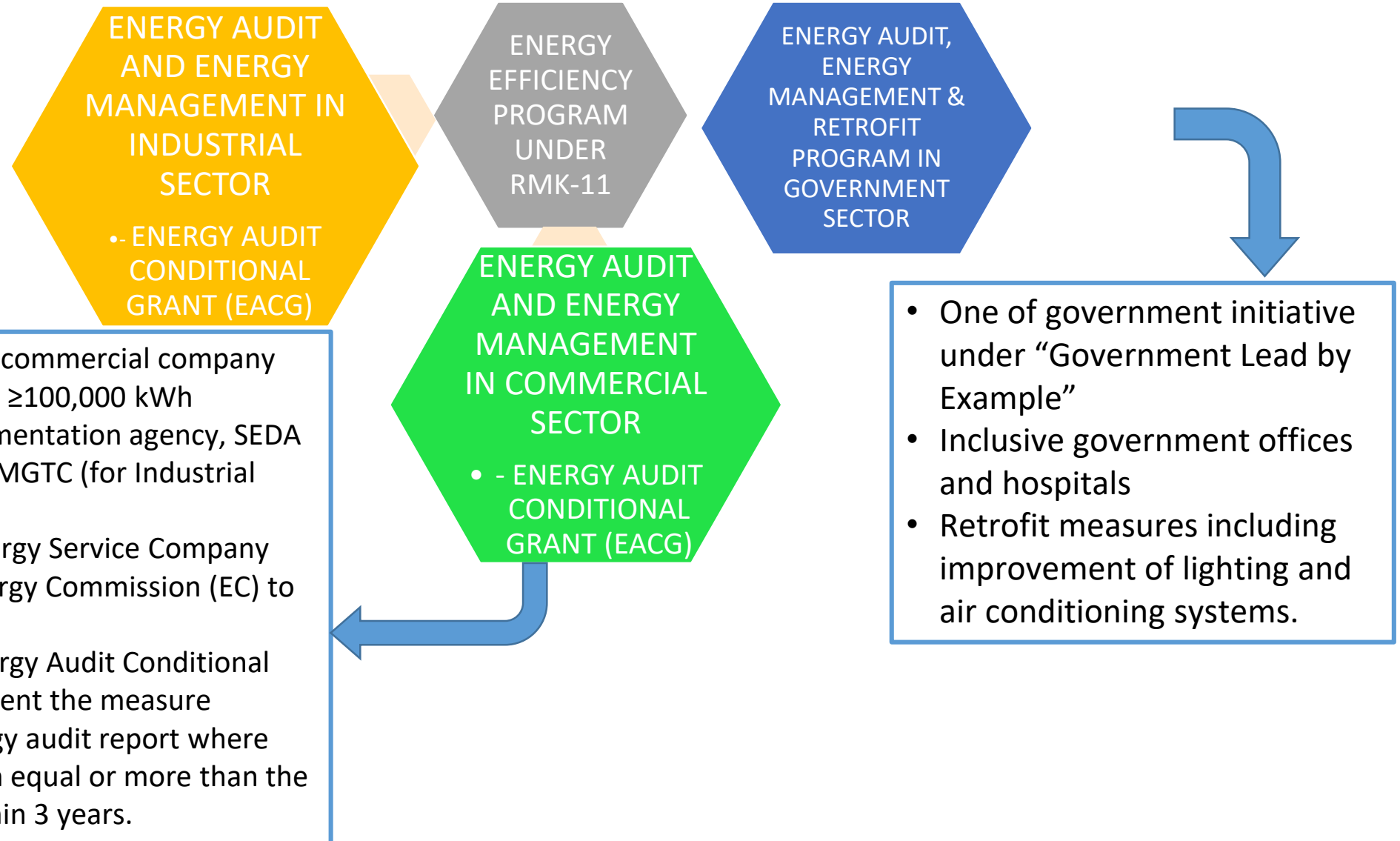


	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BAU (GWh)	117,110.00	121,431.00	125,885.00	130,474.00	134,830.00	139,206.00	143,326.00	146,991.50	150,657.00	154,142.00
NEEAP (GWh)	117,022.82	121,045.12	124,784.35	128,188.22	131,046.79	133,730.77	136,164.99	138,082.36	140,003.55	141,750.89
NEEAP Annual Saving (GWh)	87	386	1,101	2,286	3,783	5,475	7,161	8,909	10,653	12,391
Cumulative Savings (GWh)	87	473	1,574	3,859	7,643	13,118	20,279	29,188	39,842	52,233
Percentage NEEAP Saving from BAU	0.1%	0.3%	0.9%	1.8%	2.8%	3.9%	5.0%	6.1%	7.1%	8.0%
Current NEEAP Impact (GWh)	116,274	119,777	123,231	126,424	128,966	131,352	135,045			
Actual Annual Saving Monitored (GWh)	836	1,654	2,654	4,050	5,864	7,854	8,281			
Percentage Actual Annual Saving from BAU	0.71%	1.36%	2.11%	3.10%	4.35%	5.64%	5.78%			

ENERGY AUDIT CONDITIONAL GRANT (EACG)



ENERGY EFFICIENCY PROGRAM UNDER THE 11TH MALAYSIA PLAN



ENERGY EFFICIENCY PROGRAM UNDER THE 11TH MALAYSIA PLAN

INDUSTRIAL SECTOR		COMMERCIAL BUILDING SECTOR	
138	Total Application Received	169	Total Application Received
12	Total Application rejected (Not meeting the criteria)	32	Total Application rejected (Not meeting the criteria)
126	Total Application Approved by Steering Committee	137	Total Application Approved by Steering Committee
18	Total Application Withdraw (Not Signing the Agreement)	29	Total Application Withdraw (Not Signing the Agreement)
108	Total Application Proceed (Signing Agreement)	109	Total Application Proceed (Signing Agreement)
108	Total Audit Completed	109	Total Audit Completed

Average % Potential saving from each energy audit = **11.94% ≈ 12%**

Average % Potential saving from each energy audit = **18.46%**

No of ESM implemented & Saving kWh* - Industry

Type of ESM	2018	2019	2020
Air Cond System / Chiller / AHU (Installation of high efficient unit only)	33	18	21
Awareness Program	20	20	17
Cogeneration			1
Compressor System (Installation of high efficient unit only)	15	7	7
Fan System (Installation of high efficient unit only)	2		1
Inverter / VSD / VFD	23	17	14
Lighting (Installation of high efficient unit only)	116	169	118
Motor (Installation of high efficient unit only)	6	13	12
Operation Control	91	113	54
Others	51	61	39
Process	38	20	9
Pump System (Installation of high efficient unit only)	10	10	4
Waste Heat Recovery			3
Total	405	448	300

Type of ESM	Category	2018	2019	2020
Air Cond System / Chiller / AHU (Installation of high efficient unit only) - kWh	kWh	5,397,742.13	1,353,120.91	1,730,357.50
Awareness Program - kWh	kWh	305,547	129,398.26	37,646.78
Cogeneration - kWh	kWh			4,905,552
Compressor System (Installation of high efficient unit only) - kWh	kWh	10,922,819.69	216,402.88	1,673,401.74
Fan System (Installation of high efficient unit only) - kWh	kWh	54,829		5,700
Inverter / VSD / VFD - kWh	kWh	3,897,850.06	2,429,902.31	2,684,940.89
Lighting (Installation of high efficient unit only) - kWh	kWh	5,014,360.28	4,104,613.06	4,825,976.72
Motor (Installation of high efficient unit only) - kWh	kWh	239,678.94	2,383,673.99	1,147,531.90
Operation Control - kWh	kWh	19,601,468.10	20,295,912.65	10,479,476.32
Others - kWh	kWh	4,584,069.10	8,380,547.38	3,794,511.94
Process - kWh	kWh	8,499,461.64	4,713,143.70	10,124,735.90
Pump System (Installation of high efficient unit only) - kWh	kWh	1,445,887.50	1,080,617.80	341,078
Waste Heat Recovery - kWh	kWh			510,048

Analysis of Saving	Category	2018	2019	2020
Total new saving generated	kWh	59,963,713.44	45,087,332.94	42,260,957.69
Total annual saving	kWh	59,963,713.44	105,051,046.38	147,312,004.07
Average saving / Installation	kWh	624,622.02	1,094,281.73	1,534,500.04
% saving / installation	%	2%	3%	5%

* Only for completed report for year 2018 - 2020

No of ESM implemented & Saving kWh* - Commercial Building

Type of ESM	2018	2019	2020
Air Cond System / Chiller / AHU (Installation of high efficient unit only)	11	10	6
Awareness Program	5	6	2
Fan System (Installation of high efficient unit only)	1	0	0
Inverter / VSD / VFD	2	3	1
Lighting (Installation of high efficient unit only)	57	34	40
Motor (Installation of high efficient unit only)	2	1	0
Operation Control	15	28	22
Others	21	15	18
Process	3	0	0
Pump System (Installation of high efficient unit only)	2	1	0
Total	119	98	89

Type of ESM	Category	2018	2019	2020
Air Cond System / Chiller / AHU (Installation of high efficient unit only) - kWh	kWh	594,524.82	1,701,262.49	1,243,558.97
Awareness Program - kWh	kWh	29,548.00	39,825.80	0.00
Fan System (Installation of high efficient unit only) - kWh	kWh	0.00	0.00	0.00
Inverter / VSD / VFD - kWh	kWh	64,800.00	86,000.00	484,044.01
Lighting (Installation of high efficient unit only) - kWh	kWh	1,194,438.94	600,438.95	507,309.86
Motor (Installation of high efficient unit only) - kWh	kWh	0.00	11,300.00	0.00
Operation Control - kWh	kWh	2,283,483.50	2,261,613.26	1,008,018.17
Others - kWh	kWh	1,564,844.10	470,697.88	533,929.54
Process - kWh	kWh	59,580.00	0.00	0.00
Pump System (Installation of high efficient unit only) - kWh	kWh	0.00	254,215.87	0.00

Analysis of Saving	Category	2018	2019	2020
Total new saving generated	kWh	5,791,219.36	5,425,354.25	3,776,860.55
Total annual saving	kWh	5,791,219.36	11,216,573.61	14,993,434.16
Average saving / Installation	kWh	148,492.80	287,604.45	384,447.03
% saving / installation	%	2%	4%	5%

* Only for completed report for year 2018 - 2020

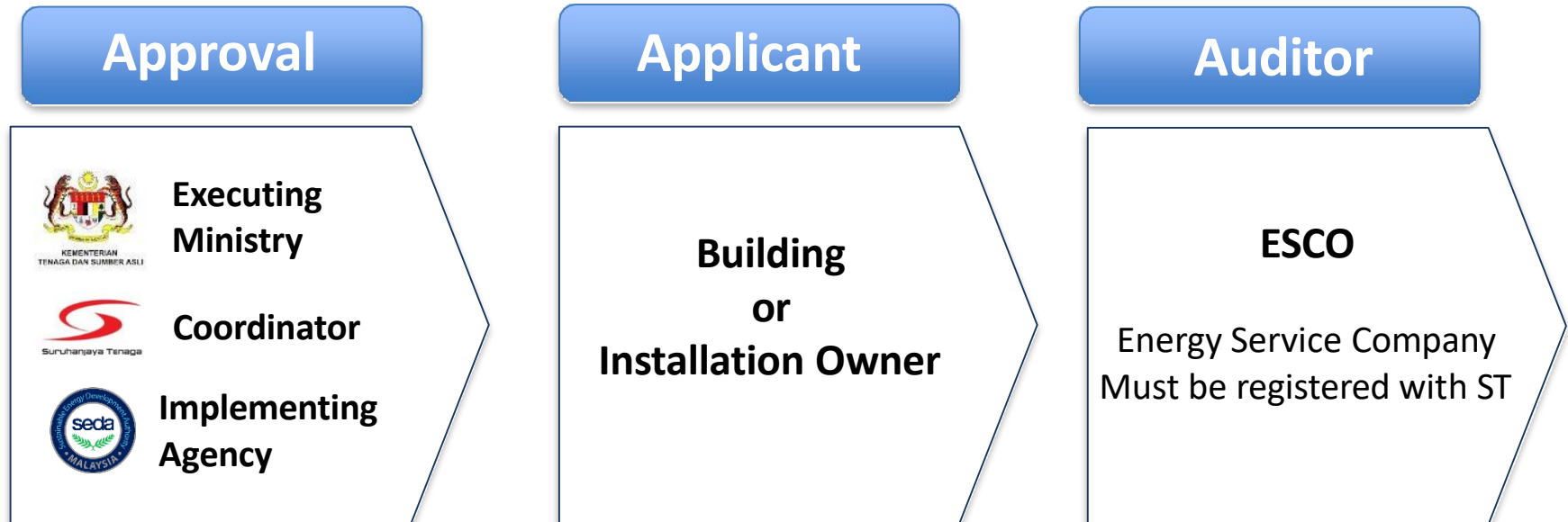
EACG 2.0

The Energy Audit Conditional Grant (EACG) is an energy efficiency programme under the **12th Malaysia Plan (RMK-12)** for the implementation year of 2021-2025.

Grant

Industrial : up to RM 100,000
Commercial : up to RM 60,000

- Grant will be given to the building owner
- Building owner must appoint Energy Service Companies (ESCO) to carry out energy audit activities
- Building owner will use the grant for energy audit purposes



Eligibility



ELECTRICITY USAGE

Open to any
commercial and
industrial
installation with
minimum monthly
consumption
100,000 kWh/month



NOT A PREVIOUS EACG APPLICANT

Not eligible for any
installation which
has **received a
grant from the
previous Energy
Audit Conditional
Grant**



AGREED TO APPOINT PERSON IN CHARGE

Benefits Of EACG



Financial Assistance
(Grant)



Identify Potential
Energy Savings



FREE Facilitation



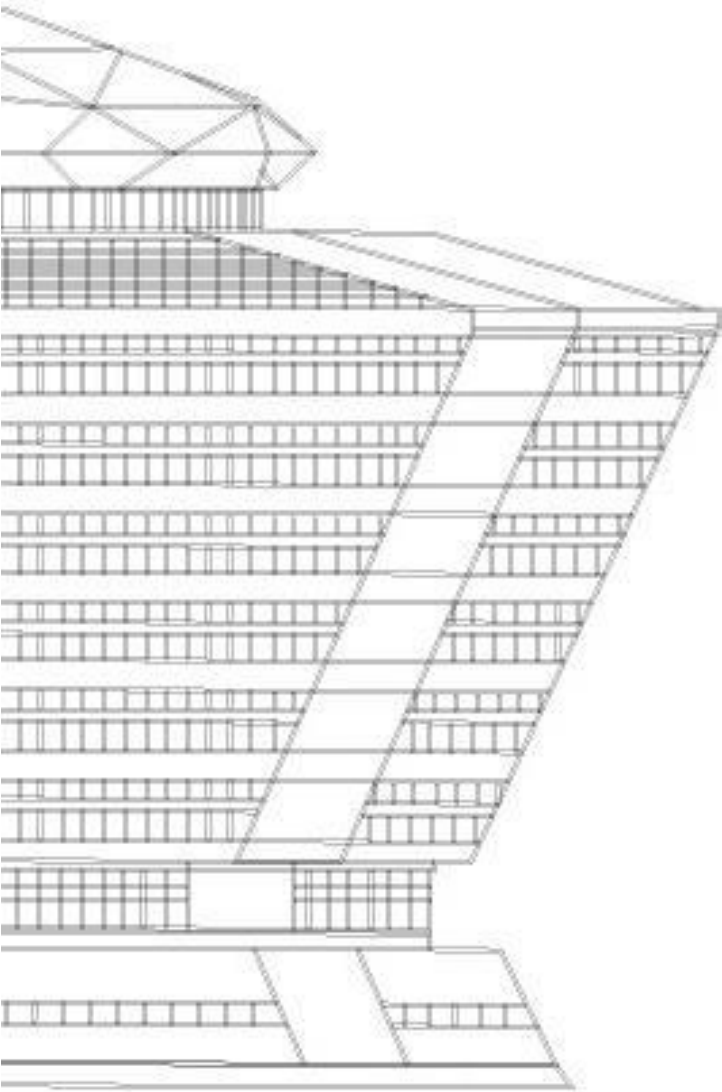
FREE Recognition



FREE Training



FREE Awareness



Thank you