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The Need of Education and Training on Maritime Energy Efficiency (EE) in Myanmar



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 - (WMUWA)
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Objectives

- To highlight the barriers of developing countries to implement EE
- To link up the developing and developed countries in operating of EE plans
- To point out the essential role of education and training in improving EE technology



- Part I: Introduction
- **Part II:** Myanmar Maritime Industry Situation
- Part III: Current Activities of Training Institutes in Myanmar
- Part IV: Best Practices for Myanmar
- Part V: Discussion & Conclusion



 To eliminate air pollution by shipping industry
 To establish clean ocean and green environment in Myanmar

IMO Energy Efficiency Measures in Marine Industry



Part II :Current Myanmar Maritime Industry Situation

i. Strengths

1. Geographical feature

- Strategic area of South East Asia
- Long costal line and deep sea ports
- Shortest way to contact east and west of the world
- Many navigable rivers

2. Natural Resources

- oil 💿
- Natural gas
- Resources for renewable energy such as wind , wave , tide, hydraulic and solar

3. Human Resources

- Humble people
- Quick leaners



ii. Weaknesses

1.Inland Region

- Outdated inland vessels
- Lack of awareness
- Shortage of modernized seafarers
- Poverty of regional people

2.Offshore Region

- Insufficient operational support
- Lack of marine environmental protection
- Lack of legislation and contingency plans
- 3.Myanmar Shipbuilding and Port sector
- Still applying conventional method in building
- Not really get enough information about EE
- Need more facilities and infrastructure in port operation
- Draft limitation for sea going vessels



III. Important Role of Education and Training (E&T)for Human Resource rather than Natural Resources



- State income achieve by exporting raw natural resources
- Lack of technology to apply the raw materials to become quality exports (for example : LNG bunkering stations in Deep sea ports)

Part III: Current Activities for Energy Efficiency Management of Training Institutes in Myanmar

MMU (Myanmar Maritime University)

- MMMC (Myanmar Mercantile Marine College)
- Private Training Centers authorized by DMA

MMU

Recent Researches within 2014 to 2016

Study of Trim Dependence for Ship performance in the Actual Sea Conditions by Computational Fluid Dynamics (CFD)

Study on Hull Form Optimization for Minimum Wave Resistance Based on Rankine Source Method

Trim Optimization of container ship by test tank and numerical simulation

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Analysis of the Passenger Ship with **EEDI Specifications:** Using Light Material for Superstructure (**Renovation Technology**)

MMMC and Private Training Centers

Certificate of Competency Courses (CoC) are based on IMO model courses 7.01, 7.02, 7.03, 7.04



Part IV: Proposing Best Practices for EE Training in Myanmar

Legislation

National laws for Air pollution MARPOL, Annex VI (Suitable guideline: Annex 7, MEPC 62/24)

Building Networking Capacity

Not only Academic Activities but also National and International Activities.

Best Practices

Adhesion to IMO Model Courses

Training Courses on Energy Efficiency Operation of Ships

Cooperation with Regional Society

ASEAN ; BIMSTEC; Colombo Plan and etc.

Part V: Discussion and Conclusion

I. Discussion

Green Ships, Competent Seafarers and Clean Ocean

Implementation of Marine Environmental Conservation Plans

Government Supports and People Self-awareness

Hierarchies for Implementations of Marine Energy Efficiency Measures

Government Organizations and Recognized Organizations can:

- Coordinate in national level
- Cooperate at international level
- Promote awareness amongst recognized classification societies
- Support and Incentives ship owners and builders
- Set fuel-efficiency standards and labeling for vehicles

II: Conclusion

Root Causes of Barriers are lack of:



E&T should emphasize on the following areas by applying the proposed best practices :



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Question!!!