



# Master Class on Bio Renewable Energy

**Date** : 28<sup>th</sup> June 2013

**Time** : 9:00am – 5:00pm

**Venue** : SEAS Training Centre at Park Mall

To keep up with targets on sustainability, different governments in the region have embarked on aggressive policies to develop renewable energy sources, most notably solar and bio renewable energy.

Bio Renewable Energy is an extensive ecosystem, spanning across biomass, waste-to-energy, biogas, biofuels etc. Understanding each technology, its applications, engineering benefits and constraints alongside risks and financial profitability of projects is critical for project developers and investors seeking to venture into this field.

To help demystify the industry, the Sustainable Energy Association of Singapore (SEAS) is organizing a 1-day Master Class on Bio Renewable Energy sources.

## Programme Outline

### Introduction

- Demystify bio renewable and how you can participate
- Why more participation is needed in this emerging market segment

### Feedstock

- Municipal Solid Waste: waste to wealth
- Agricultural waste: Palm, Cassava, Coconut
- Energy Crops:
  - Sweet Sorghum
  - Energy Grasses
  - Cassava
  - Eucalyptus
  - Willow
- Emerging Feedstocks:
  - CO<sub>2</sub> & Algae
  - Jatropha

### Technology Demystified

- Anaerobic Digestion
- Trans-esterification
- Gasification and Plasma Arcs
- Boiler and Incinerators
- Catalyst based conversion
- Fermentation
- Industrial Bio-technology

## Objectives

At the end of the course, the participants will understand:

- the sources and values of renewable fuels & materials in ASEAN markets
- how Municipal Solid Waste (MSW) and other feedstocks can be used for a variety of products including electricity, fuel pellets, chemicals and cosmetics
- the commercially available technologies to process the fuels & materials
- which technologies are most suitable under different regulations and incentives in South East Asia
- investment success in these markets with some real world examples.

## Target Audience

- Operation Managers
- Engineers
- Technical Staff
- Project developers
- Consultants
- Strategic Planners
- Business Analysts
- Finance Managers
- Energy Specialists
- Agriculture Professionals

## Products

- Electricity
- Fuels
- Plastics
- Chemicals
- Cosmetics
- Pharmaceuticals
- Heat for Process
- Combined Heat and Power (CHP)



## Project Development

- Non-ASEAN regulations (fuel)
- Corporate mandates and investment hurdles
- Development framework and global compliance

## Project Drivers, Markets and Regulations

- Energy Regulation overview
- Energy Incentives overview
- Fuel Subsidies
- National Industry Focuses

## Project Development & Case Studies

Organized by:



Sustainable Energy Association of Singapore (SEAS)

9 Penang Road, #08-02 Park Mall Singapore 238459 | Tel: +65 6337 9886 | Fax: +65 63376658 | [www.seas.org.sg](http://www.seas.org.sg)

**About SEAS**

Sustainable Energy Association of Singapore (SEAS) an industry association launched in 2006, today has 160 members in the area of Energy Efficiency, Solar, Wind, Biomass, Carbon and Clean Energy Financing. SEAS aims to be the voice of sustainable energy industry and promote the business of its member companies.

Today, SEAS is also specializing in running trainings, courses and conferences only in the area of sustainable energy. SEAS aims to be the one stop, information and training provider, in the area of sustainable energy. Our trainers and lectures are not only highly qualified academic professionals but also industry specialists and professionals that are successful and sought after practitioners in the area of Sustainable Energy. Majority of Key Qualified Personnel(KQP) and Accredited Energy Services Companies are members of SEAS. They have, as a group successfully executed a multitude of energy projects with varying complexities both locally and regionally.

**About the Trainer**



**Steve Peters** brings 25 years of engineering and social leadership to the development and delivery in the new energy economy - changing the way we think, build and operate our industries, products and lifestyles. With development experience throughout Asia Pacific varying from the roll-out of new telecom networks, development of rural bio-gas power in Cambodia to the renovation of a Mosque in Singapore, Steve brings extensive cross cultural understanding to development and social development. Steve works in a company that develops and delivers renewable and sustainable projects throughout the Asia Pacific region. He has recently published a book about transitioning to sustainable living without going crazy entitled "Greenotoxosis".

**Bio Renewable Energy**

**Date: 28 June 2013, Time: 9:00 am – 5:00 pm, Venue: SEAS Training Centre at Park Mall**

**Registration Form**

- Yes! I would like to register for this programme.
- I am unable to attend but please put me on your mailing list.

	Early Bird (Registration with payment made on/before 17 June 2013)	Normal Fee (Closing Date: 27 June 2013)	Group Fee (Closing date: 27 June 2013)	No. of Delegates	Fee Payable
<input type="checkbox"/> SEAS Member	S\$502.90	S\$535.00	-		
<input type="checkbox"/> Non Member	S\$535.00	S\$642.00	S\$502.90		

- \* Fees are inclusive of GST.
- \* Fees include refreshments, lunch and programme collateral.
- \* Enjoy group discount for 4 or more delegates registered at the same time from the same organization and same billing source.
- \* Only one type of discount scheme is applicable at any one time.
- \* Please print and complete additional sheets where necessary.
- \* Important: Walk-in delegates will only be admitted on the basis of space availability and with full payment made on site.

**Participant's Details**

1. Name (\*Dr/Mr/Mrs/Ms): ..... NRIC: .....  
Designation: ..... HP No: ..... Email: .....
2. Name (\*Dr/Mr/Mrs/Ms): ..... NRIC: .....  
Designation: ..... HP No: ..... Email: .....
3. Name (\*Dr/Mr/Mrs/Ms): ..... NRIC: .....  
Designation: ..... HP No: ..... Email: .....

**Organization's Details**

Company Name: .....  
 Company Address: ..... Postal: .....  
 Contact Person's Name : (\*Dr/Mr/Mrs/Ms) .....  
 Tel: ..... Fax: .....  
 Email: .....

**Administrative Information**

**Registration and Payment**

Please complete the enclosed registration form and forward it together with your **cheque at least 7 days before the commencement of the programme to**

**Sustainable Energy Association of Singapore**  
 9 Penang Road  
 #08-02 Park Mall  
 Singapore 238459

Crossed cheque should be made payable to **"Sustainable Energy Association of Singapore"**  
 Application will close on **27 June 2013**.

**Cancellation**

SEAS reserves the right to change programme venue, cancel or reschedule the programme if necessary or warranted by circumstances beyond our control.

There will be no refund of fees for withdrawal. However, if the registration participant is unable to attend, a representative may be allowed to attend at no extra cost. Please inform us of the changes by fax or via email 3 days before the commencement of the programme.

**Confirmation of Registration**

Confirmation of registration will be given 5 working days before the commencement date via email. Registration is confirmed only upon receipt of payment.

If you do not hear from us  
**Please contact Ms Sherlene Lim at:**  
 Tel: 63379886  
 Email: training@seas.org.sg  
 Fax your registration form to 63376658