

# Welcome to the CIMAC Circle 2009



Exhaust Emissions

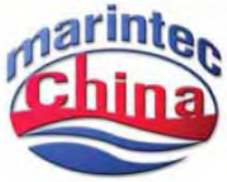
Users

Fuels and Lubricants

Engine Specification

Classification

<http://www.cimac.com>



## **CIMCA Circle 2009**



# **Life-cycle costs - the impact of fuel and emissions**

chaired by

**Mr. Yasuhiro Itoh, Managing Director,  
Niigata Power Systems Co., Ltd.,  
and member of the CIMAC Board.**



What does **CIMAC** stand for?

**C**onseil **I**nternational des **M**achines **A** **C**ombustion  
**I**nternational Council on Combustion Engines

**Founded 1951 in Paris to bring together:**

- **Engine manufacturers (Diesel and gas turbine)**
- **Users (Ship owners, utilities, rail operators)**
- **Engine operators**
- **Component suppliers**
- **Oil companies**
- **Classification societies**
- **Research organisations**
- **Universities**



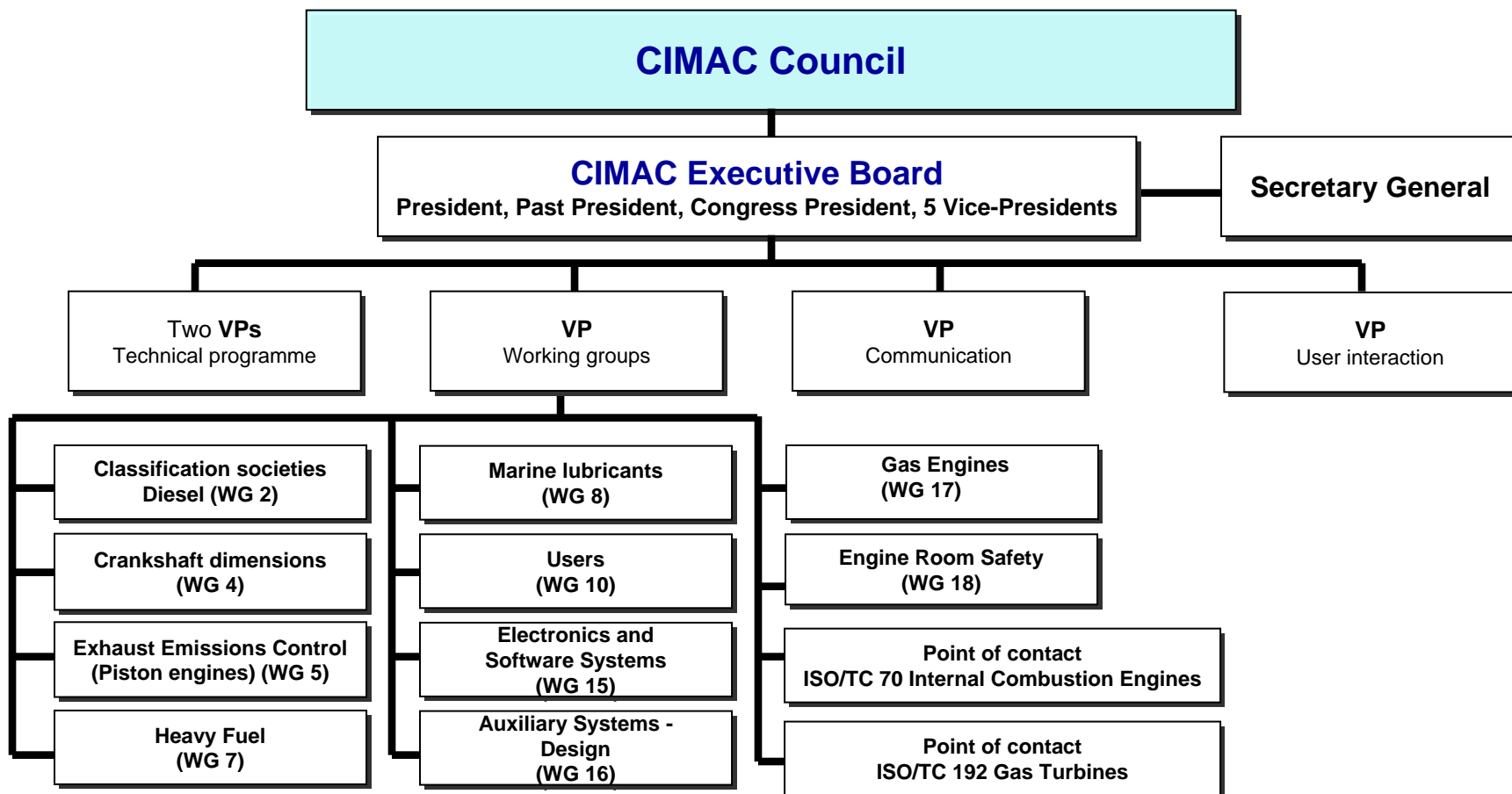
## **CIMAC — Guiding principles**

---

- ⇒ **Promote exchange of scientific and technical information via its CIMAC Congress (25) and CIMAC Circles**
- ⇒ **Improve understanding between engine manufacturers and users**
- ⇒ **Improve understanding between manufacturers and suppliers**
- ⇒ **Promote Working Group activities**
- ⇒ **Focus upon and promote the work and activities of National Member Associations**
- ⇒ **Issue publications and support work in the area of standardisation**
- ⇒ **Collaborate with other International Associations**
- ⇒ **Inform regularly about CIMAC activities**



# CIMAC — Management Structure



The CIMAC Council is formed by 16 National Member Associations and Groups (NMA/NMG) from Austria, China, Denmark, Finland, France, Germany, Greece, India, Iran, Japan, Korea, Norway, Sweden, Switzerland, United Kingdom, United States of America plus more than 25 Corporate Members (CM) from various countries.



# **CIMAC — Board Members**

---

- ⇒ **President:** Karl Wojik/AVL
- ⇒ **Past President:** Prof. Nikolaos Kyrtatos/NTUA
- ⇒ **Vice Presidents:**
  - **Users:** Oyvind Toft/Bergesen
  - **Working Groups** Søren Jensen/MAN Diesel
  - **Communication** Hanspeter Zingg/ABB Turbo Systems
  - **Technical Program** Yasuhiro Itoh/Niigata Power Systems  
Klaus Heim/Wärtsilä
- ⇒ **President 2010 Congress** Einar Sundt/Rolls Royce Marine
- ⇒ **Secretary General** Markus Heseding/VDMA

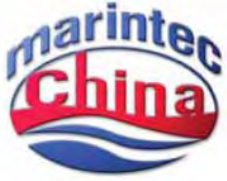


## **CIMAC — Congresses and events**

1951	Paris / FR	1973	Washington / US	1991	Florence / IT
1953	Milan / IT	1975	Barcelona / ES	1993	London / GB
1955	The Hague / NL	1977	Tokyo / JP	1995	Interlaken / CH
1957	Zurich / CH	1979	Vienna / AU	1998	Copenhagen / DK
1959	Wiesbaden / DE	1981	Helsinki / FL	2001	Hamburg / DE
1962	Copenhagen / DK	1983	Paris / FR	2004	Kyoto / JP
1965	London / GB	1985	Oslo / NO	2007	Vienna / AU
1968	Brussels / BE	1987	Warsaw / PL	2010	Bergen / NO
1971	Stockholm / SW	1989	Tianjin / CN	2013	Shanghai / CN

More than 20 **CIMAC Circles** were held all over the world since 1996, on various actual topics, locally or regularly during international trade fairs.

On November 26, 2009, CIMAC started a new event aimed at younger engineers with the aim to create a discussion forum for younger engineers and leading industry experts. It is called **CIMAC CASCADES** – that stands for:  
**CA**se **S**tudies in **C**ombustion engine **A**pplications and **D**esign **E**xperiences**S**



## **CIMCA Circle 2009**



# **Life-cycle costs - the impact of fuel and emissions**

chaired by

**Mr. Yasuhiro Itoh, Managing Director,  
Niigata Power Systems Co., Ltd.,  
and member of the CIMAC Board.**



# The panelists

---

**Prof. D. Jin, Shanghai Marine Diesel Engine Research Institute**

**K. Aabo, MAN Diesel, Denmark**

**M. Troberg, Wärtsilä Industrial Operations, Italy**

**A. Wang, ABB Jiangjin Turbo Systems Company Limited, China**

**J. Hammett, Shell Global Solutions (Deutschland) GmbH, Germany**

**O. Toft, BW Fleet Management AS, Norway**

# **Professor JIN, Donghan**

---



**President of**

**Shanghai Marine Diesel Engine Research Institute, China**

**Vice President of CSICE (responsible for large engines)**

**Chinese Society for Internal Combustion Engines**

**CIMAC Chinese NMA**

# **Kjeld AABO**

---



**Director Promotion**

**MAN Diesel AS, Denmark**

**since 1983 in various positions with MAN**

**CIMAC: Chairman of the Working Group (WG) "Heavy Fuel Oil",  
member of the CIMAC WG Marine Lubricants**

# Mikael TROBERG

---



**Director Testing & Performance**  
**Wärtsilä Industrial Operations, Italy**  
**with Wärtsilä since 1993**

# **WANG, Allan-QingZhou**

---



**Director New Turbocharger Business**

**ABB Jiangjin Turbo Systems Company Limited, China**

**since 1993 in various positions with ABB Turbocharging**

# **Jerry HAMMETT**

---



**Marine Technology Manager with  
Shell Global Solutions (Deutschland) GmbH, Germany  
since 1976 with Shell in various positions**

**CIMAC: member of the Working Group "Lube Oil"**

# Oyvind TOFT

---



**Head of Section Technical Support**

**BW Fleet Management AS, Oslo / Norway**

**in various positions since 1976**

**CIMAC Vice President Users / Member of the Board**



# The panelists

---

**Prof. D. Jin, Shanghai Marine Diesel Engine Research Institute**

**K. Aabo, MAN Diesel, Denmark**

**M. Troberg, Wärtsilä Industrial Operations, Italy**

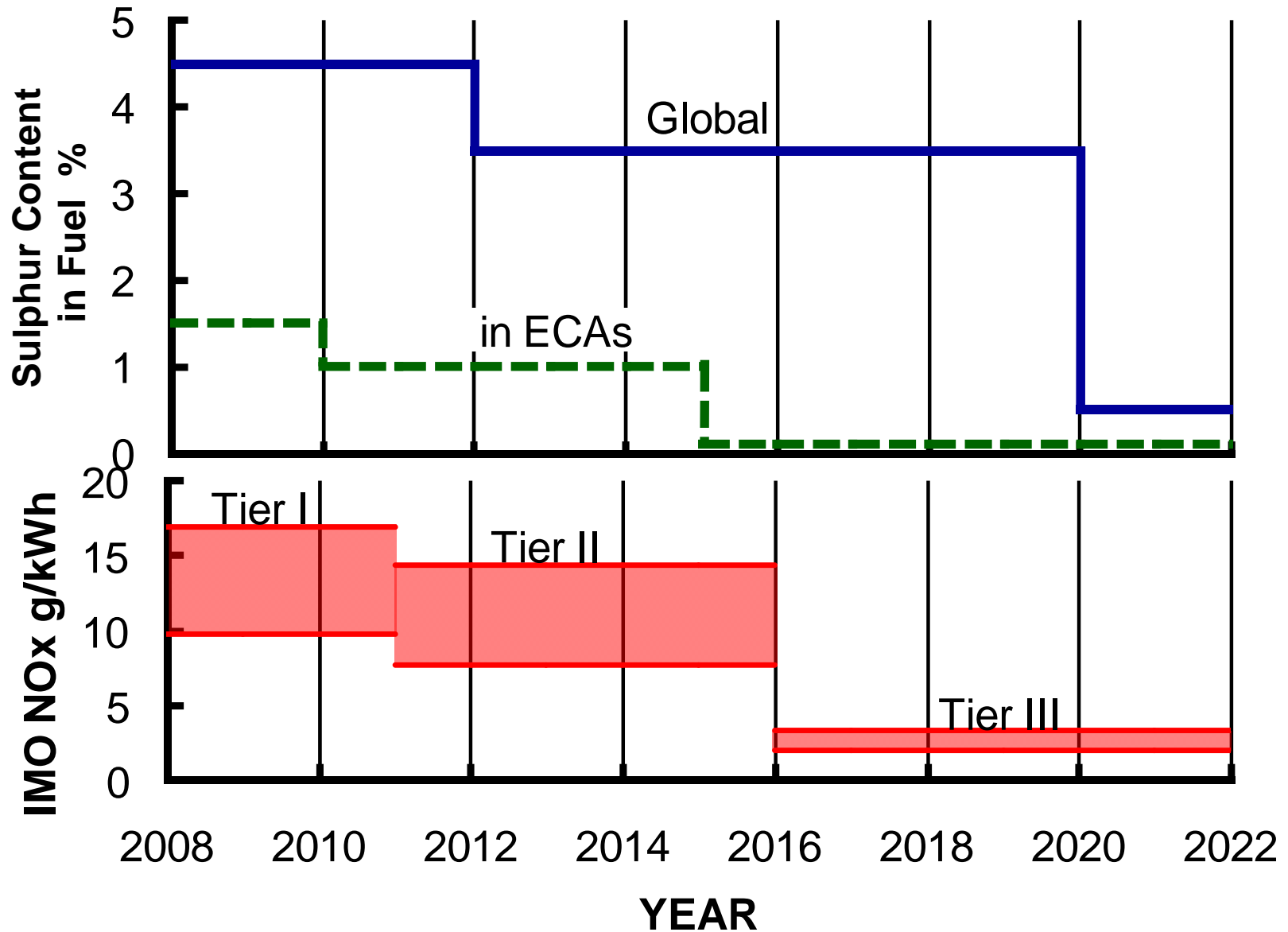
**A. Wang, ABB Jiangjin Turbo Systems Company Limited, China**

**J. Hammett, Shell Global Solutions (Deutschland) GmbH, Germany**

**O. Toft, BW Fleet Management AS, Norway**



# Revised MARPOL Annex VI

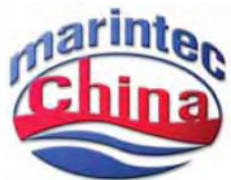
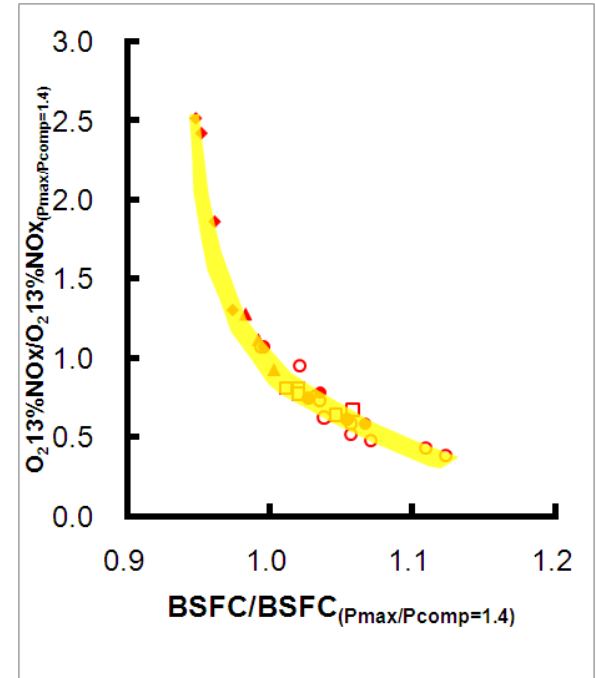




# What should we do?



- ✓ **NOx emission and fuel consumption are in trade-off relation**
- ✓ **Fuel consumption must be reduced for the reduction of GHG(CO<sub>2</sub>)**
- ✓ **Low sulfur fuel may require additional process in the refinery**
- ✓ **Further reduction of NOx needs additional measures out side of engine, which increases additional cost**





# Discussion

**Discussion will be the followings;**

- ✓ **To what level NO<sub>x</sub>, SO<sub>x</sub>, GHG emissions should be reduced?**
- ✓ **What technology will be applied as technically possible and commercially feasible point of view?**
- ✓ **What is the impact of manufacturing, operation cost of the engines, ships and fuel?**
- ✓ **Who will/shall bear such cost?**
- ✓ **Clean air is not free of charge.**

