

*Commission on Mineral and Thermal Waters*

*Commission Eaux Minérales et Thermales*



# **MINUTES OF THE 42<sup>nd</sup> ANNUAL SESSION**

**23 - 29 September 2013, Rotorua, New Zealand**

**“Geothermal and volcanic sights of the North Island, New Zealand”.**

According to the decision of the CMTW-IAH Meeting 2012 in Budapest, Hungary, the next meeting of the Commission in 2013 was held in Rotorua, New Zealand, from Monday 22 September to Sunday 29 September, 2013.

The Meeting was considered as convenient and interesting choice of the post-congress field trip for the participants of the 40<sup>th</sup> International Association of Hydrogeologists Congress (IAH 2013) held in Perth Convention and Exhibition Centre, Australia, 15 - 20 September, 2013.

During the Congress, the place and time for the CMTW members meeting was provided.

The Minutes contains two Attachement:

Attachment 1: Itinerary of the CMTW meeting in New Zealand by Andy Shugg.

Attachment 2: IAH working meeting program during the IAH-2013 Congress.

### **Local organizing committee**

Dr. Andrew Shugg, (Australia, Senior Hydrogeologist, Sinclair Knight Merz, IAH-CMTW Member)

Dr James LaMoreaux, (USA, CEO PELA GeoEnvironmental, President of the US National Chapter of the IAH, Chairman of the IAH-CMTW)

### **Scientific committee**

Dr. Werner Balderer (ETH - Zurich, IAH-CMTW Vice Chairman)

Dr. James LaMoreaux (USA, IAH-CMTW Chairman, President of the US National Chapter of IAH, CEO PELA GeoEnvironmental)

Dr Kurt von Storch, (Germany, IAH-CMTW member, CEO Spa Med & Wellness Gmbh, Expert Medical Spa and Wellness)

## LIST OF PARTICIPANTS

No	Name	Country	e-mail
1	LAMOREAUX, JAMES (Chairman)	USA	<a href="mailto:jlamoreaux@pela.com">jlamoreaux@pela.com</a>
2	BALDERER, WERNER (Vice Chairman)	CH	<a href="mailto:balderer@erdw.ethz.ch">balderer@erdw.ethz.ch</a>
3	SHUGG, ANDREW	AU	<a href="mailto:ashugg@skm.com.au">ashugg@skm.com.au</a> <a href="mailto:ashug@globalskm.com">ashug@globalskm.com</a>
4	VON STORCH, KURT	GER	<a href="mailto:info@drvonstorch.de">info@drvonstorch.de</a>

## ACCOMPANING PERSONS

No	Name	Country	
1	LaMoreaux, Nicole, Mrs	USA	field session & cultural program
2	Balderer, Christina, Mrs	CH	field session & cultural program
3	Sarah Shugg	AU	field session & cultural program
4	Susan Shugg	AU	field session & cultural program

## ABSENT MEMBERS

Name	Country	Member / Cand. Memb.	Absent with apologies
POROWSKI, ADAM	PL	M	*
DOWGIALLO, JAN	PL	M	*
FÓRIZS, ISTVÁN	HU	M	*
DEÁK, JÓZSEF	HU	M	
LORBERER, ÁRPÁD	HU	M	
VYLITA, TOMÁŠ	HU	M	
HAŁAJ, ELŻBIETA	PL	CM	*
WACHOWICZ-PYZIK, ANNA	PL	CM	*
FERU, ADRIAN	RO	M	
POPESCU, MARIA	GR	M	
CARELLA, ROBERTO	IT	M	
RYBACH, LADISLAUS	CH	M	

CALADO, Carlos	PT	M	
CRUZ, José Virgilio	PT	CM	
CUCHI, Antonio	ES	M	
DOTSIKA, LIANA	GR	CM	
FRANCESCHI, Michel	FR	M	
FRICKE, Michael	FR	M	
HABERMEHL, Rien	AUS	M	
HERCH, Andrea	GER	M	
IBRAGIMOVA, Irada	AZN	M	
IDRIS, Hussein (vice Chairman)	EGY	M	*
ISSAADI, Abderrahmane	ALG	M	
LAHERMO, Pertti. W.	FIN	M	
LACHASSAGNE, Patrick	FR	M	*
LAING, Colin	AUS	M	
LESMO, Renato	IT	M	
KRALJ, PETER (hon. Chairman)	SLO	M	
MELIORIS, Ladislav	SLO	M	
MICHEL, G.	GER	M	
MARCIN, DANIEL	SK	M	
MOORE, JOHN	USA	M	
PANG, Zhonghe	CHINA	M	
POUCHAN, Pierre	FR	M	
ROSENTHAL, Eliahu	IS	M	
RISLER, JEAN J.	FR	M	
SCHNEIDER, Jean	AUS	M	
SHAWKI, Abdine	ET	M	
SHTEREV, KOSTADIN	BUL	M	
TAHLAWI, Mohamed Ragaie El	EGY	M	
VINOGRAD, NATALIA	RU	M	*
VERDEIL, Pierre	FR	M	
Vylita, Sen,	CZ	M	
ZUURDEG, Boudewijn	NL	M	

## Meeting Location

Rotorua Bath House, Rotorua, New Zealand.

## Sites Visited:

### Ngawha

- Geothermal CO<sub>2</sub> Pool,
- Ngawha Geothermal Power Plant Inspection,
- Ngawha Geothermal Mud Pools and Bathing facility

### Coramandal Peninsula:

- Miranda Springs – geothermal swimming pool
- Thames Geothermal Gold fissure based Mine
- Hot Water Beach
- Te Aroha Mineral Spas

### Bay of Plenty

- White Island Volcano –a crater inspection in clouds of SO<sub>2</sub>, ten days after an eruption

### Rotorua

- Bath House – Blue Baths – Polynesian Baths
- Whakarewarewa Thermal Village
- City - Urban Geothermal Parks and resurgent fumaroles
- Hospital and Hotel Geothermal bores
- Te Puia – Geysers and mud pools
- Waiotapu Thermal – terraces, mud pools, champagne pool and fumaroles

### Taupo

- Wairakei Terraces
- Wairake Power Plant
- Huka Falls

### After tour terraces

- Orakei Korako - The Hidden Valley

### In Victoria Australia by the Balderer's and Shugg

- Coastal Basin Deep Aquifer Geothermal groundwater at Port Fairy
- Volcanic Plains of Western Victoria volcanic cones and lakes
- Mineral Springs (cold carbonated) of Central Victoria.
- Old fissure based Gold Mines at Ballarat

## **Agenda / Points of discussion**

### **at the CMTW Meeting in 2013, Rotorua, New Zealand**

1. Welcome of the members and participants.
2. Acceptance of the CMTW Minutes from Budapest, Hungary, 2012.
3. New information (update) regarding the activities of the Commission and on-going and future projects.
4. Propositions of the next meetings: discussion.
5. Miscellaneous

### **Protocol (by James LaMoreaux, the convener)**

#### **Ad. 1.**

The main organizer, dr Andy Shugg, gave welcome speech and presented shortly the program of the meeting and itinerary schedule.

The chairman of the CMTW, dr James LaMoreaux, welcomed the members and presented the meeting agenda.

#### **Ad. 2.**

The Minutes of Budapest meeting in 2012 was sent by secretary dr Adam Porowski to the chairman (the convener), dr James LaMoreaux, before the meeting. The chairman presented the Minutes which were subsequently accepted by the members.

#### **Ad. 3.**

a) The chairman gave updated information regarding the new CMTW website. The new website was set up by Anna Wachowicz and Elżbieta Hałaj from AGH University of Science and Technology, Krakow, Poland in close cooperation with the secretary of CMTW, Adam Porowski. The website of the following address:

<http://www.cmtw.c0.pl>

have been constructed and placed in the free server for update and examination.

It is proposed that a link to the IAH website will be established.

Up to date the website is still under construction and updating by new information concerning the CMTW activity and history. Dr Anna Wachowicz and Elżbieta

Halaj take care of its proper working update. The website is prepare to be linked to the official IAH website.

- b) The Convener shared information that has met with the IAH Committee. James LaMoreaux met with Ken Howard and reported on outcomes to the executive members Werner Balderer and Adam Porowski, this concerned: (i) a discussion of the Hungarian Meeting and its outcomes, (ii) the Mineral and Thermal Water Bibliography is available.

It was of interest that in the IAH Perth Conference Geothermals had been developed as low enthalpy waters for bathing and wellness.

Moreover, The Commission on Mineral and Thermal Waters as an entity appears to have been accepted by the IAH Committee.

- c) On-going projects:

- 2009 – Cairo Book:

The convener informed that the Book including notes on the field trip have being almost prepared. It is estimated to be published in the end of 2013 or beginning 2014.

- 2010 – Evian Publication:

The convener informed that dr Werner is doing a draft, compiling the papers from the French contributors and those from the CMTW member.

Werner Balderer to send to James LaMoreaux: A requirement for Werner Balderer is to identify:

Title,

Chapter,

Email Address,

If a paper is to be contributed

- 2012 - Hungarian Conference Publication; Fórizs István ([forizs.istvan@csfk.mta.hu](mailto:forizs.istvan@csfk.mta.hu)) has compiled and it is ready.

- Project - New Book Series
  - a) Prof Jan Dowgiałło ([dowgian@twarda.pan.pl](mailto:dowgian@twarda.pan.pl)) has been preparing the history of the Commission and this is to be published as a IAH publication.
 

Note: National Science Foundation in US (<http://www.nsf.gov/>) is preparing an inventory of Mineral and Thermal Springs. Possibly there is a need for an International version documenting the thermal and mineral springs of the world. It was recognized that this was a large job.
  - b) Ideas appropriate for the applications to mineral and thermal waters.
  
- IAH Committee
  - a) The IAH Association Newsletter will draw attention to the upcoming publication of the History of the IAH CMTW prepared by Prof. Jan Dowgiałło.
  - b) Report on the New Zealand Meeting
  - c) James LaMoreaux will send the report to the IAH Committee.

#### **Ad. 4.**

Discussion concerning next CMTW meetings:

- First proposition:  
 2014 – Karlovy Vary Meeting.  
 This is to be held between 8 – 11<sup>th</sup> September 2014.  
 Suggested topics sort include: (i) Medical and curative aspects of mineral waters, (ii) Geological aspects of the mineral and thermal waters occurrence.  
  
 In addition the meeting will be conducted in the week preceding the 2014 – IAH Congress in Morocco. The Morocco IAH Conference will be between 15 – 19<sup>th</sup> September. :
  
- Second proposition:  
 2015 – Crimean Peninsula  
  
 The peninsula was discussed as it might be a potential site to include in a future IAH – CMTW site visitation schedule.  
 The organizing committee can be: dr Elena Kayukowa – University of St. Petersburg, Natalia Vinograd – University of St. Petersburg, Adam Porowski – Institute of Geological Sciences PAS (ING PAN), and Russian Chapter of the IAH.



## **Ad. 5.**

Miscellaneous: General Business

### Name Change

Name change to include Geothermics. Possibly “Mineral, Thermal Waters and Geothermics” or “Mineral Waters and Geothermal Applications”.

### Organisational Liaison

Develop a cooperative relationship with IGA, New Zealand Geothermal Association ([http://www.nzgeothermal.org.nz/nz\\_geo\\_fields.html](http://www.nzgeothermal.org.nz/nz_geo_fields.html))

Andy Shugg – get New Zealand Aust contacts {wwb site links}

### Articles into IAH Newsletter

Identify and approach speakers at the Perth Conference

### Sponsorship

Andy Shugg to seek information from major bottlers and from Tourism Organisations

### New Members

- Contact IAH Committee to advertise in its newsletter
- Prepare a list of other Geothermal Organisations
- Establish liaison with other IAH Commissions

### Transfer of information

See web-transfer and similar large file size transfer sites on web

# ITINERARY

## GEOHERMAL & VOLCANIC SIGHTS OF THE NORTH ISLAND, NEW ZEALAND



22<sup>nd</sup> - 29<sup>th</sup> SEPTEMBER 2013

Client Details:

Name: Dr Andrew J Shugg  
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Sunday 22<sup>nd</sup> September 2013

Own arrangements for the day

Accommodation: Mercure Windsor Auckland - 58-60 Queen St Auckland

Monday 23<sup>rd</sup> September 2013

Own arrangements for the day

Accommodation: Mercure Windsor Auckland - 58-60 Queen St Auckland

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Tuesday 24<sup>th</sup> September 2013

Morning

7.00am **Breakfast** - own arrangements with hotel

8.00am **Depart Auckland (AKL) - 3hrs drive to Ngawha**

11.30am **90mins Visit Top Energy Power Station - Ray Robinson, Plant Manager: Please advise if you are running late**  
DDI: +64 9 400 9817, MOB: 0274810060,  
ray.robinson@topenergy.co.nz



Afternoon

1.30am **Lunch** - own arrangements

2.30pm **Waiariki Pools at Ngawha Springs RD, Ngawha Springs - they have a pamphlet that tells you a bit about the benefits of the pools.**

**There is a \$4.00 cost to be paid on arrival if you want to swim**



Ngawha hot pools offer a variety of mud pools to soothe away your worries. From boiling hot to tepid, there's a pool for everyone. The muddy sediment on the bottom should be rubbed on your body (don't be scared) and left to dry for a natural body mask. If you're heading north, Ngawha, just out of Kaikohe, is a must visit. Over 10 small pools with water of all temperatures and colours, all with their unique healing properties

Depart Kaikohe for the 3hr drive back to Auckland

**Dinner** - own arrangements on the way back to Auckland

Staying at the Mercure Windsor Auckland - 58-60 Queen St Auckland

Wednesday 25<sup>th</sup> September 2013

Morning

7.00am **Breakfast** - own arrangements

8.00am **Depart for Miranda Springs - 1hr drive**

9.00am **Miranda springs 100% Natural Mineral Pools - This will be an extra \$13.00 per person if you decide to swim**

Come and relax with us at Miranda Hot Springs in our thermally heated fresh mineral water. Centrally located, we have three pools to suit all swimmers.

Our largest pool is 47m by 17m of hot thermal mineral water at a temperature of between 36°C and 38°C depending on the season. This pool has accessible entry by an aqua-lift. The children's pool is maintained at a cooler temperature while the adult-only sauna pool sits at around 40°C-41°C. In addition, we have four private spa pools.



10.00am **Depart Miranda Springs to Thames Goldmine - 25mins drive to goldmine**



10.30am **Thames Goldmine, 40 minutes tour -**

The tour underground can be muddy, especially during the wetter months. Bring closed-toe footwear and a water proof jacket just in case, your own torch if you have one, and plenty of luck to strike it rich!

**SAFETY** - The underground mine is inspected regularly and meets government standards. It is mandatory that visitors to the site carry out instructions from Goldmine Experience guides or any Hauraki Prospectors Association member while on the site. Hauraki Prospectors Association Inc. (HPA) hold the site under a Crown Mining Licence and is the owner of all historical buildings and equipment. HPA reserve the right to restrict access to any part of the site at any time for health and safety reasons.

Afternoon

12.00pm **Lunch** - Own arrangements in Thames township

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Wednesday 25<sup>th</sup> September 2013

Afternoon cont.

1.00pm **Thames Museum** - there is in a park setting with modern buildings. It has period rooms with genuine locally used furnishings and clothing. Period shops include a Barbers' shop, Palmer's Sweet Shop, a grocer's and a dress shop with models. There are also Maori artefacts and photos of local Maori people. Boer war guns and relics of both World Wars, mining, kauri timber, foundry and early newspaper displays, miners "cabin", Hauraki Plains farming, beekeeping, penny-farthing cycles, early Thames cycles, car and railway exhibits make up the rest of the exhibits. There is also a section on early hospital and medicine, schools of early times from 1867 including teaching resources, status and work of women, men's work tools, clothing and accessories up to 1930s, china, Plant Pottery. There is also a large photo collection. Corner of Pollen and Cochrane Streets, Grahamstown, Thames. North end of Pollen Street, New Zealand

3.00pm **Depart Thames for Whitianga - 1hr - 15mins drive**

4.10pm **Whitianga - Hot water beach** - low tide time - You can visit up to 2hrs either side of low tide time (2.10pm - 6.10pm)

**Depart Whitianga for Whakatane via Tauranga - 3hrs 30mins drive**

**Dinner** - own arrangements on the way

8.00pm **Check into White Island Rendezvous Motel - +64 7 308 9588 - Reception closes at 9.00pm please call if you are going to be later then this**

**Please Note: Check with the Reception desk for the time of your departure on the White Island tour in the morning.**

**If the tour is cancelled I will process the refund for everyone.**

Thursday 26<sup>th</sup> September 2013

### Morning

7.00am **Breakfast** - own arrangements at motel or town

9.15am **White Island Tours**  
offers you the  
incredible experience  
of exploring the inner  
crater of New  
Zealand's only active



marine volcano - White Island! Located 49km off the coast of Whakatane, New Zealand, White Island Tours offers its visitors a 6 hour adventure to this fascinating island volcano.

#### **What to Bring**

Fully enclosed shoes with good grip.  
Warm waterproof jacket  
Drink/water bottle  
Sunscreen  
Camera

#### **We Provide**

Quality cruising aboard purpose-built vessels  
Professional and experienced crew and tour guides  
1.5 - 2 hour fully guided walking tour of White Island's inner crater area.  
A light packed lunch and refreshments  
Safety gear (gas mask and hard hat)  
Permit to land on the island  
Permit to spend time with any marine life that we encounter

### Afternoon

3.45pm **Depart Whakatane for Rotorua - 1 hour 15mins drive**

5.20pm **Meet at Mitai Hangi & Concert - 196 Fairy Springs Road (next to Rainbow Springs) if you are running late please call +64 7 343 9132**

Enter the world of Mitai, be enthralled by the natural bush setting and see warriors in traditional dress paddling a waka (ancient warrior war canoe). The cultural performance tells of ta moko (tattoo art), displays of weaponry, the grace of the poi dance and finishing with the mighty Haka. Watch your traditional Hangi being lifted from the ground. Take the opportunity to see glow worms and the crystal clear waters flowing from Fairy Springs. Bring warm clothing and good walking shoes.

8.30pm **Depart Mitai for the IBIS Hotel - The Reception is open 24hrs**

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Friday 27<sup>th</sup> September 2013

Morning

7.00am **Breakfast** - own arrangements

8.00am **Depart Rotorua for Waiotapu - 30min Drive**

8.30am **Arrive Waiotapu Thermal Wonderland Park**

Wai-O-Tapu (Sacred Waters) is NZ's most colourful and diverse volcanic area. Home to the Champagne Pool, experience the raw beauty and sheer power that Mother Nature offers in all forms of geothermal activity! Stimulate the senses with the sights and sounds of gushing geysers, plopping mud, thundering craters and sizzling earth.

10.00am **Drive around for 10.15am Lady Knox Geyser eruption - 2mins drive**

10.15am **Depart Waiotapu for Wairakei Terraces - 30mins Drive**

10.50am **Arrive at Wairakei Terraces for 11.00am Guided Geothermal Tour - 2 hrs**

Visit the Silica Terraces and geothermal features which have been created using surplus geothermal fluid. Then travel to the steam field lookout which overlooks the Waiora Valley and the Wairakei geothermal field. Then visit the binary Lookout and then onto the viewing room at the PowerStation. Includes Q&A along the tour. Safety clothing: long trousers, long sleeves, closed in shoes (no jandals/sandals)

Afternoon

1.00pm **Arrive at Huka Prawn Park for Lunch** - own arrangements - choose from the café or a la carte menus at own cost.

2.00pm **Huka Park Tour** - We specialise in Aquaculture, a term used to describe the propagation and rearing of aquatic animals in a controlled or selected environment. The aim here was to research and develop the ability to breed and grow tropical prawns in captivity using waste geothermal heat from the geothermal power station next door. 25min tour

2.25mins **Depart for Waimangu Boat Cruise - 40mins Drive**

3.05pm **Arrive at Waimangu Boat Cruise - Bus leaves at 3.15pm for 3.40pm Boat Cruise**

6.30pm **Dinner** - own arrangements

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Saturday 28<sup>th</sup> September 2013

Morning

7.00am **Breakfast** - own arrangements

8.45am Join the **9.00am Guided Tour of Te Puia**, taking in the Maori Arts and Crafts Institute and Whakarewarewa Thermal Valley, home to bubbling hot springs, plopping mud pools and the mighty Pohutu Geyser! See also the newly renovated Kiwi House and Interactive Gallery.

10.45am **Arrive at Whakarewarewa Thermal Village for 11.00am Cultural Performance:** Hear the melodious voices and feel the rhythm and passion of the cultural presenters, who will entertain you with song and dance. Then join the **12.00pm Guided tour** of the 'Thermal Village', and view bubbling mud pools and mineral springs where the Villagers have bathed for generations. You can even see where food gets cooked in a natural steam vent!

Afternoon

1.00pm **Lunch** - own arrangements

2.00pm **Rotorua Museum - Bath House, Government Gardens, Blue Baths - You can take a guided tour at 2pm (please check in earlier than 2pm) or walk yourself around unguided** - Discover the essence of Rotorua, its people, culture and volcanic landscape. Let us share with you the great stories which have shaped the past and present of New Zealand's premier visitor destination. Located in the world-famous Bath House building, an architectural icon in itself, Rotorua Museum is a must-see for all who visit Rotorua. See: Rotorua Stories - Cinema Experience, The Spiritual World of Te Arawa, Ake! Ake! The Story of B Company 28 Maori Battalion, Tarawera - Te Maunga Tapu / A Sacred Mountain, Taking the Cure - The Story of Rotorua's Bath House

4.00pm **Depart Rotorua for Te Aroha - 1hr 20min drive**

5.30pm **Te Aroha Mineral Spas** - Bruce Langlands, Community Facilities Operations Manager will meet you at 5.30pm at the spa for a 30mins talk - Please call +64 272734661 if you are running late please

If you would like to swim please call +647 884 8717 prior to arriving to book a time - This will be an extra an extra cost per person if you decide to swim - \$18.00 per person 30mins, \$26.00 per person 45min, \$34.00 per person 1hr - Open to 10pm

Inside our Edwardian building in the beautiful Te Aroha domain, you can choose from two kinds of relaxing, refreshing spas. Both spa types are filled with our natural, silky smooth hot soda water that has made Te Aroha famous for over 100 years.

6.00pm **Dinner** - own arrangements

7.00pm **Depart for Auckland - 1hr 40mins Drive**

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## POINTS TO NOTE:

- Costs include GST unless otherwise stated.
- Group rates apply for 10 or more people.
- Prices are indicative until the time of booking and may change based on availability and final requirements. Prices are subject to change without notice.
- Prices are valid through ROTORUA VISITOR CENTRE & i-SITE.
- There is no booking fee for ROTORUA VISITOR CENTRE & i-SITE'S service.

## FOR FURTHER INFORMATION PLEASE CONTACT:



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## 40th International Association of Hydrogeologists Congress Sunday 15 September - Friday 20 September 2013

*Current as a 5 September 2013 subject to change*

	Sunday Riverview Room 5	Monday Meeting Room 11 International Secretariat	Tuesday Meeting Room 11 International Secretariat	Wednesday Meeting Room 11 International Secretariat	Thursday Meeting Room 11 International Secretariat	Friday Meeting Room 11 International Secretariat		
0900 - 0930	IAH Council Meeting						0900 - 0930	
0930 - 1000							0930 - 1000	
1000 - 1030							1000 - 1030	
1030 - 1100	Morning Tea	Morning Tea in Exhibition Pavilion 1						1030 - 1100
1100 - 1130	IAH Council Meeting	Managed Aquifer Recharge Commission Meeting					1100 - 1130	
1130 - 1200							1130 - 1200	
1200 - 1230							1200 - 1230	
1230 - 1330	Lunch	Lunch in Exhibition Pavilion 1						1230 - 1330
1330 - 1400	IAH Council Meeting		Thermal and Mineral Waters Commission Meeting				1330 - 1400	
1400 - 1430							1400 - 1430	
1430 - 1500							1430 - 1500	
1500 - 1530	Afternoon Tea	Afternoon Tea in Exhibition Pavilion 1						1500 - 1530
1530 - 1600	IAH Council Meeting	Groundwater and Ecosystems Commission Meeting					1530 - 1600	
1600 - 1630							1600 - 1630	
1630 - 1700							1630 - 1700	
1700 - 1730							1700 - 1730	
1730 - 1900		IAH International AGM Meeting Room 2&3	IAH National AGM Meeting Room 1	IAH President's Meeting			1730 - 1900	