



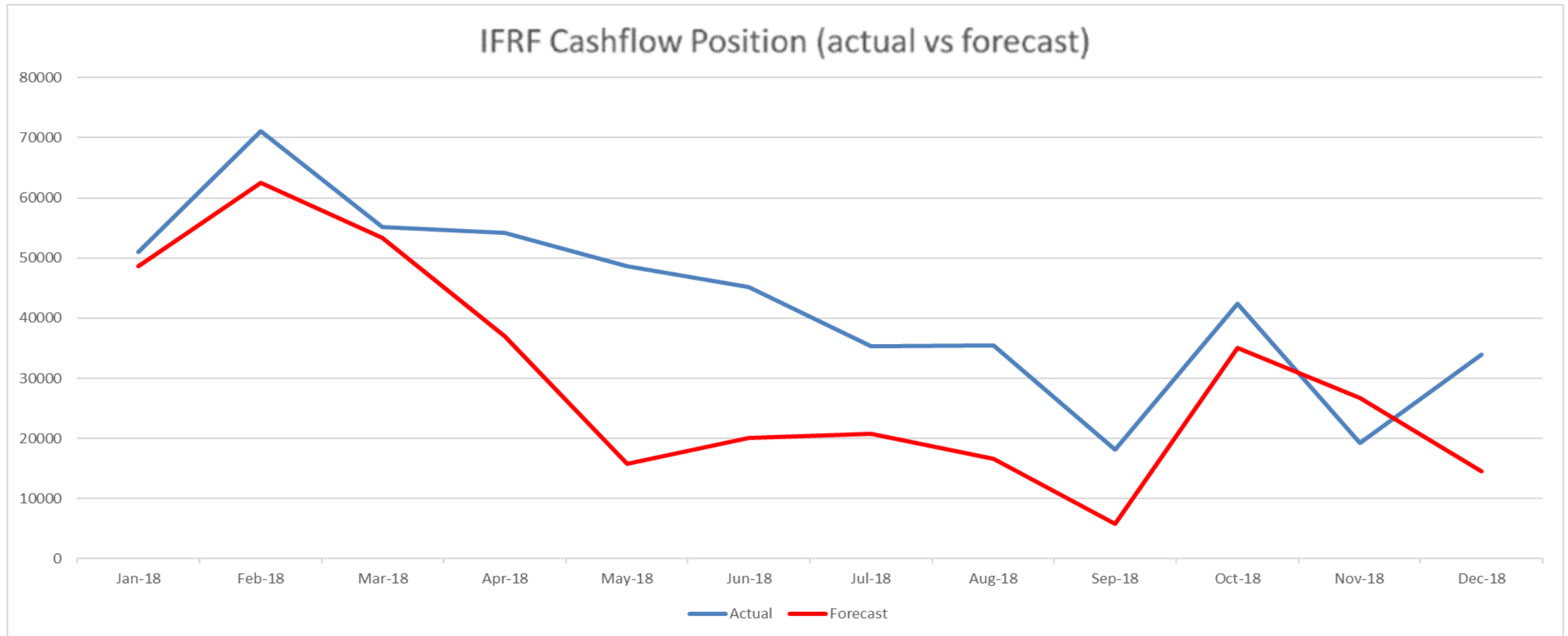
# IFRF Quarterly Progress Report (QPR) – Q4 2018

1. Finance
2. Membership
3. Communications
4. National Committee update
5. Future TOTeMs
6. Other meetings attended by IFRF
7. New website and CRM database
8. Marketing
9. Member and general enquiries
10. Industrial Combustion Journal
11. 70<sup>th</sup> anniversary
12. IFRF Ltd matters
13. Other activities





## IFRF QPR Q4: 1. Finance – forecast and financial plans



- CF exceptional contribution and CF 2018 membership received in October/November respectively
- AFRC and NVV 2019 membership fees received in December 2018
- CI 2018 membership anticipated in January 2019

## IFRF QPR Q4: 2. Membership

### 120 member organisations

- 3 down from Q3 2018
- Same as Q4 2017

#### Includes:

- Large industry = 47
- Small industry = 28
- Academia = 45

### 9 individual members

- 4 up from Q3 2018
- 3 up from Q4 2017



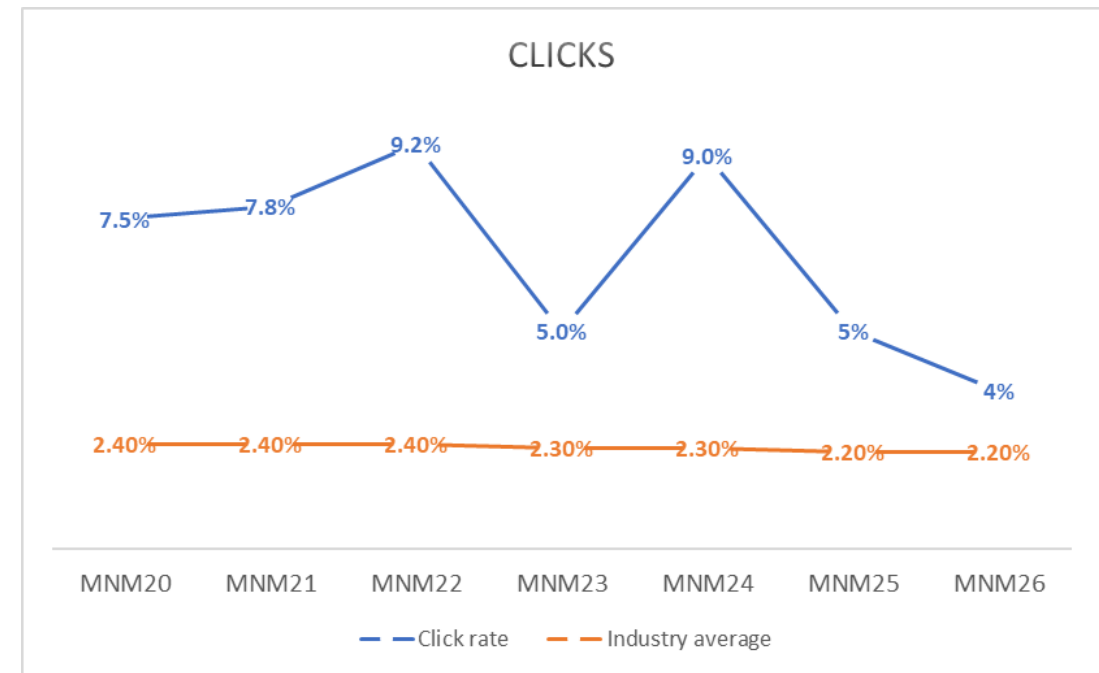
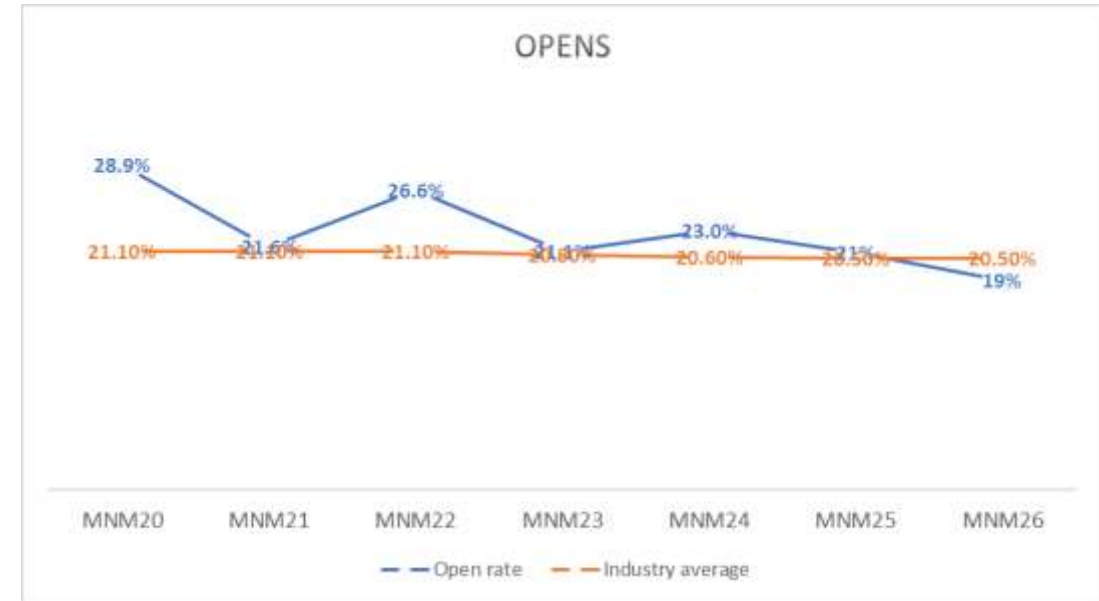
KPI for end of 2019 = 130 member organisations



## IFRF QPR Q4: 3. Communication

### MNM - Monday Night Mail (1/5)

7 MNMs published in Q4





## IFRF QPR Q4: 3. Communication

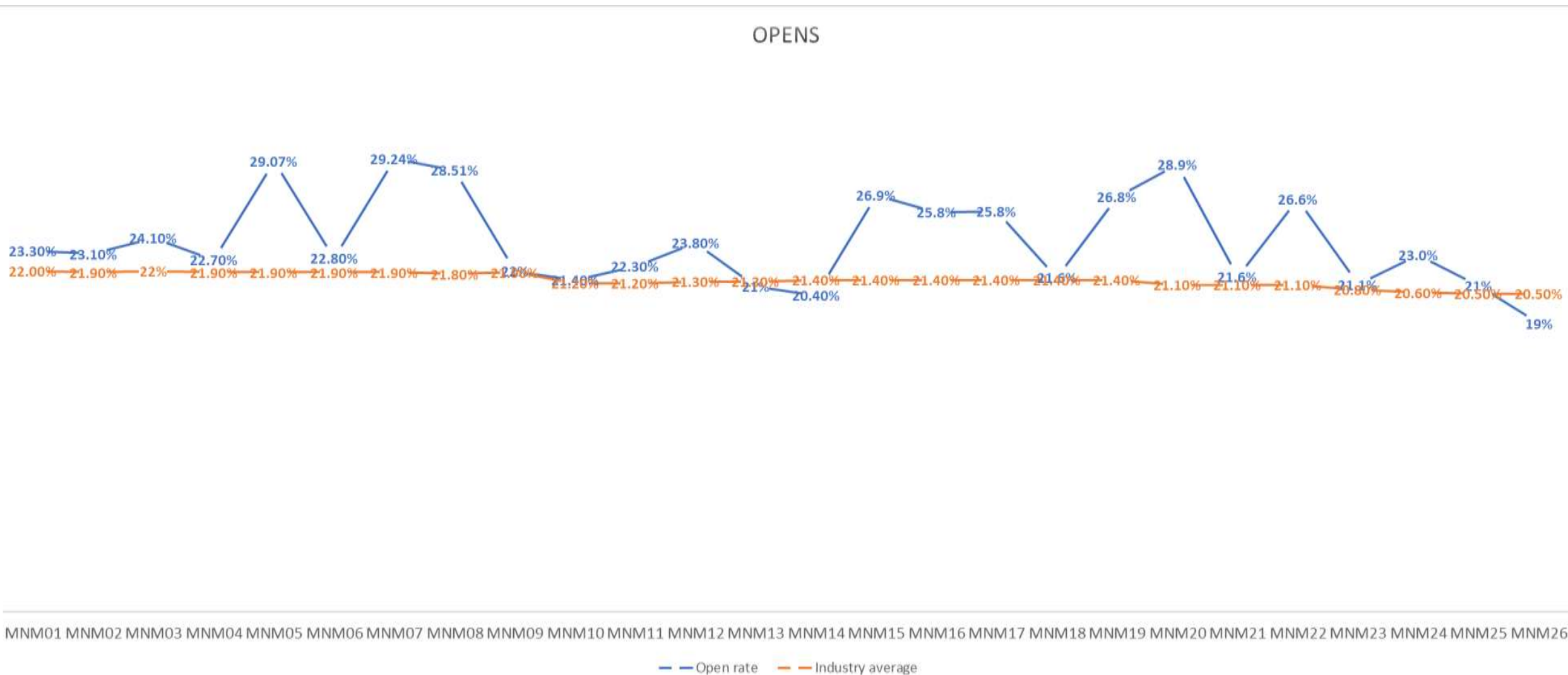
**MNM - Monday Night Mail (2/5)** Average successful deliveries in 2018 = 1120





# IFRF QPR Q4: 3. Communication

## MNM - Monday Night Mail (3/5) Average open rate in 2018 = 24%

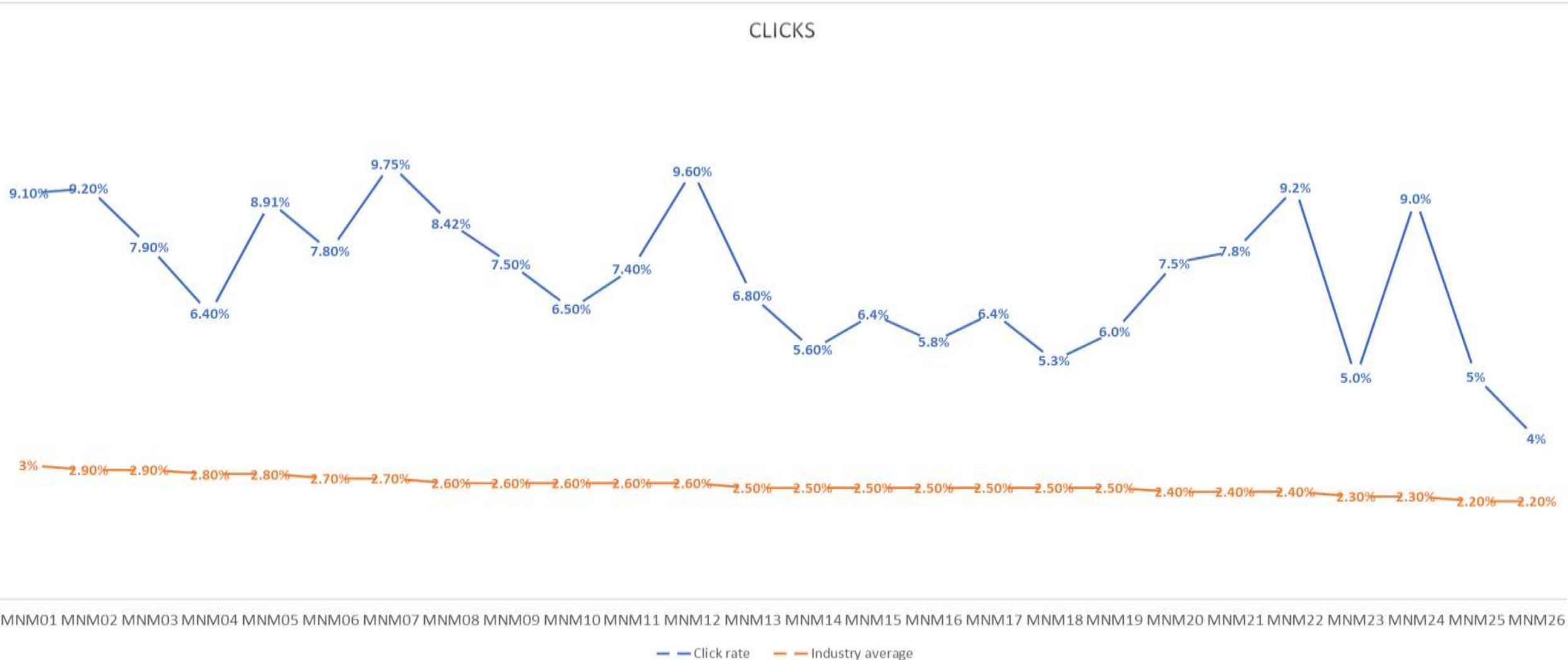






## IFRF QPR Q4: 3. Communication

**MNM - Monday Night Mail (4/5)** Average click rate in 2018 = 7.23%





## IFRF QPR Q4: 3. Communications

### MNM - Monday Night Mail (5/5)

Issue	1 <sup>st</sup> Most read article	2 <sup>nd</sup> Most read article	3 <sup>rd</sup> Most read article
MNM20	Industrial Combustion Journal - paper published!	'Green' and 'blue' hydrogen for a low-carbon European economy?	COMBURA Symposium – programme published!
MNM21	New IFRF website	9 <sup>th</sup> Finnish Flame Day: Programme published!	Reigniting the 1960s
MNM22	Infradex video: Candle flame	Member survey	9 <sup>th</sup> Finnish Flame Day – 'IX Liekkipäivä
MNM23	Reigniting the... 1950s	IEA chief worried about emissions trajectory of new Asian coal-fired power plants	RJM International wins contract
MNM24	Hydrogen: the great game-changer?	Reigniting... 1948 – six former and current IFRF staff look at the Foundation's foundations	RJM International completes latest ultra-low NOx CleanAir Burner™ project
MNM25	Tokyo Institute of Technology researchers develop method for reduction of CO <sub>2</sub> from flue gases	Back to the Future	WEO 2018: a high-stakes story set in uncertain times
MNM26	Hydrogen: so what's the use?	IFRF At 70 booklet	IFRF at 70: Special messages from our supporters



## Social media (1/5)



Oct 2018 • 31 days

### TWEET HIGHLIGHTS

**Top Tweet** earned 717 impressions

Anders Brink [@aboakademi](#) looks at fate of ash-forming materials in Bio-CLC system, and are bed materials prone to agglomeration if biomass is present. Fuels with K and Cl most problematic (most!) and biomass-induced corrosion also an issue - may need O2 polishing. [#liekkipaiva18](#)

Tweets

88

Tweet impressions

21.7K

Profile visits

608

Mentions

5

New followers

12

Followers: 229

Nov 2018 • 30 days

### TWEET HIGHLIGHTS

**Top Tweet** earned 1,498 impressions

\*1948 – 2018: Expanding Knowledge – Advancing Together\*  
While adapting to the ever-changing landscape, IFRF has consistently proved its value as an asset to the world's combustion community. This publication tells that remarkable story. [bit.ly/2PGJM1B](#)  
[#IFRFAt70](#) [pic.twitter.com/82qSJaKlxq](#)

Tweets

63

Tweet impressions

11.3K

Profile visits

151

Mentions

3

New followers

3

Followers: 232

Dec 2018 • 31 days

### TWEET HIGHLIGHTS

**Top Tweet** earned 194 impressions

For the final installment of our [#ReignitingThe...](#) blog, (in the words of Doctor Emmett Brown) "we're sending you back to the future!". See the future plans for IFRF and how you can be a part of it. [bit.ly/2Qmnp0](#) [#IFRFAt70](#)

Tweets

17

Tweet impressions

6,981

Profile visits

62

Mentions

1

New followers

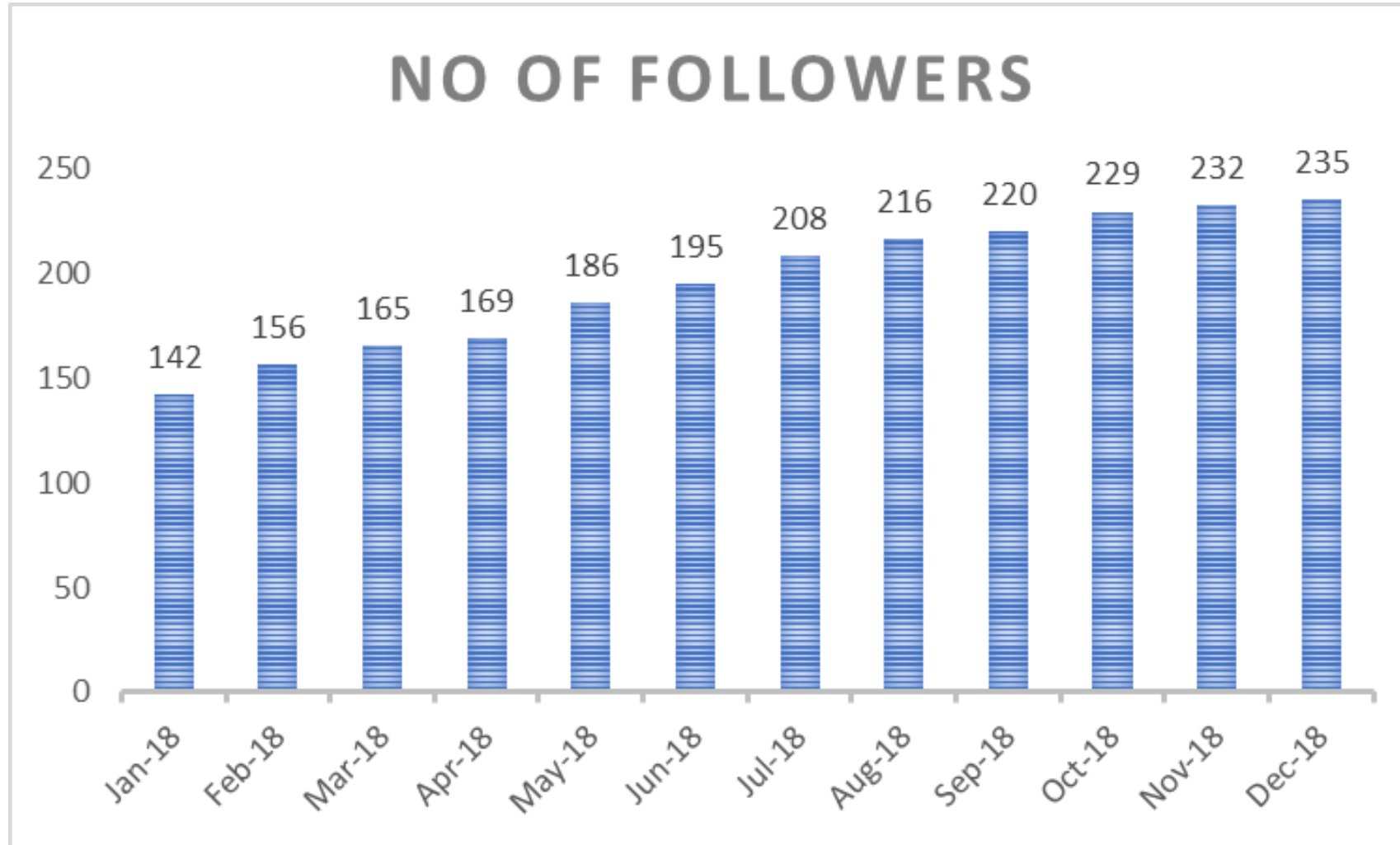
3

Followers: 235



## IFRF QPR Q4: 3. Communications

### Social media (2/5)

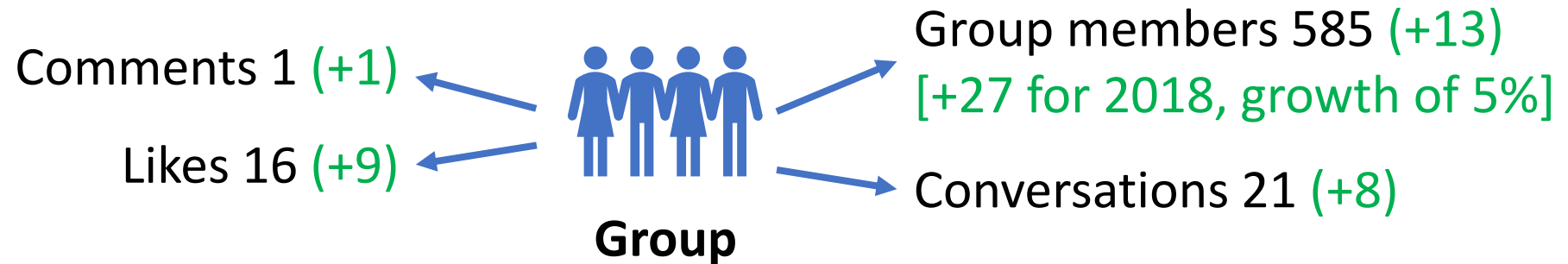


65% growth in following since start of 2018



## IFRF QPR Q4: 3. Communications

### Social media (3/5)



## Social media (4/5)

- 10 Subscribers (+2)
- 125 Views (+67)
- 68 Total watch time\* - minutes (-10)
- 550 Impressions (+387)
- 11.2% Impressions click-through-rate^ (-5.4)
- 1:39 Average watch time - minutes (+0:19)

\*total amount of time IFRF videos were watched

^Percentage of users who clicked to view after seeing IFRF videos on their timeline



## IFRF QPR Q4: 3. Communications

### Social media (5/5)

- WeChat - the social media platform used in China
- WeChat group – Chinese Flame Research Committee
  - 15 members
- 20 contacts (no change)
- Intend to set up WeChat group for all IFRF members on WeChat





## IFRF QPR Q4: 4. National Committees update

### AFRC

- 2019 membership fees paid in December 2018

### BFRC

- Represented at meeting of UK combustion-related organisations on 30<sup>th</sup> October

### CF

- 2018 Membership fees and exception contribution paid
- General Meeting 29<sup>th</sup> November

### CI

- Meeting held 5<sup>th</sup> October 2018
- 2018 Membership fees paid in December 2018

### DVV

- General meeting held 15<sup>th</sup> November 2018
- 2019 membership fees paid in December 2018

### FFRC

- Finnish Flame Day held 23<sup>rd</sup> October 2018
- Discussions held regarding Nordic Flame Days 2019

### NVV

- Held COMBURA Symposium on 10<sup>th</sup> October
- Letter from King of Netherlands regarding #IFRFAt70

### SFRC

- General meeting held 8<sup>th</sup> November 2018

### AMG

- North China Electrical Power University became member in December 2018

KPI for end of 2019 = 9 National Committees



# IFRF QPR Q4: 5. Future TOTeMs

## Potential future TOTeM topics for 2019:

- **Scaling of R&D rigs**
  - Topic generated from Nordic Flame Day 2017
- **AFRC and APIs work on standards for process heaters and flares**
  - Topic generated from AFRC Symposium 2017
  - People keen on TOTeM outside of Europe
- **Hydrogen and ammonia as energy vectors – impact on combustion**
  - Topic generated from TOTeM45
- **Energy-from-Waste (thermal processes, advanced thermal processes & biological processes relevant to IFRF)**
  - Topic generated from MNM series on EfW

KPI for end of 2019 = 1 TOTeM held





## IFRF QPR Q4: 6. Other meetings attended by IFRF

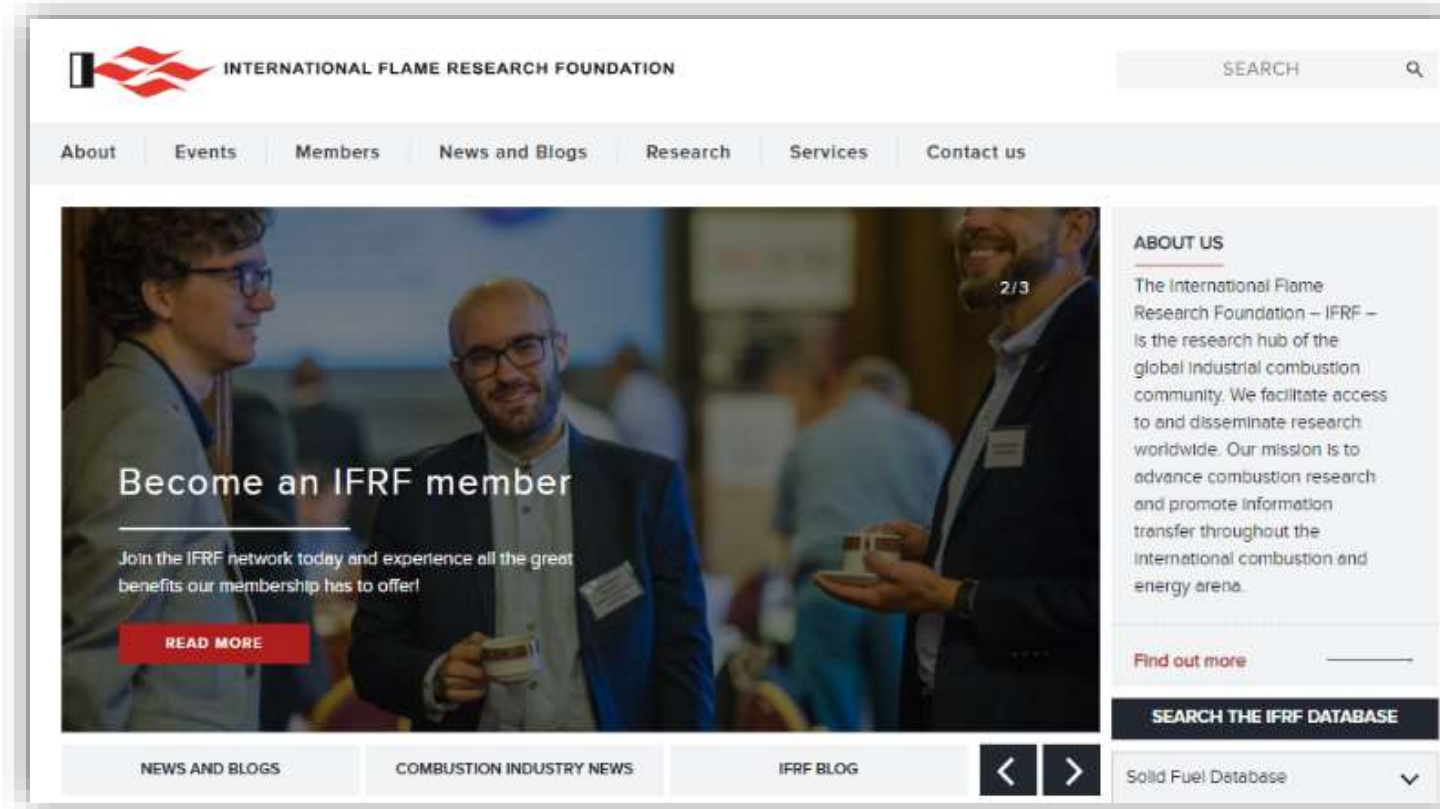
- Meeting with leadership team of proposed new Centre for Doctoral Training at University of Nottingham (Nottingham, UK)
- Organised and attended meeting of various UK combustion-related organisations to discuss cooperative activities and comms (Ratcliffe-on-Soar, UK)
- Industry Supervisor meetings with three UoS-based students at the current CCS & Clean Fossil Energy Centre for Doctoral Training (Sheffield, UK)





## IFRF QPR Q4: 7. New website and CRM database


- New website launched 11<sup>th</sup> October 2018
- IVIN support withdrawn 31<sup>st</sup> October 2018
- CRM database under development for launch in Q1 2019






# IFRF QPR Q4: 8. Marketing

- 'IFRF At 70' e-brochure published (compilation of 'Reigniting the [decade]' blogs, 'congratulatory messages' and gallery of IFRF 2018 Conference) e-published



## Celebrating 70 years of IFRF

### #IFRFAt70



**HEAR FROM**  
IFRF staff both past and present

**WARM WISHES**  
From a range of people and organisations

**SEE WHAT**  
IFRF has in store in the near future

Keep up to date by following us on



## REIGNITING THE...

#IFRFAt70

### ...IFRF Archive!

**By Philip Sharman, IFRF Director**

As part of our 70<sup>th</sup> anniversary celebrations, we have been delving into the IFRF archive to highlight key reports, presentations and journal papers and linking them to current and future challenges in the industrial combustion field. To guide us through this treasure-trove of material, we have invited some familiar faces from IFRF's past and present (Investigators, Officers, Joint Committee or Council members) to share their perspectives and point us towards some of the most significant outputs from IFRF's flame research heritage.

Some of these perspectives are based on particular periods of time in IFRF's seven decades of research activity, others are on particular research challenges that link across the decades and remain relevant to combustion researchers today.

We hope that you enjoy travelling back through time in the company of our various 'guides' until you 'arrive' back at IFRF's origins in 1948 to mark the year of our foundation.

Welcome to our 'Reigniting the...' series!

#### Contents

1. Reigniting the... 2010s – by Neil Fricker
2. Reigniting the... 2000s – by Giovanni Coraggio
3. Reigniting the... Solid Fuel Database – by Jaroslav Herczog
4. Reigniting the... mid-1990s to mid-2000s – by Peter Roberts
5. Reigniting the... 1990s and a brilliant cooperation with Japan – by Roman Weber
6. Reigniting the... mid-1980s to mid-1990s – by Jacques Dugué
7. Reigniting the... late 1970s to mid-1980s – by Gérard Flament
8. Reigniting the... 1970s – by Sigfrid Michelfeider
9. Reigniting the... late 1960s – by Klaus Hein
10. Reigniting the... 1960s – by Neil Fricker
11. Reigniting the... 1950s – by E.E.N. Fiets
12. Reigniting the... 1948 – by six former IFRF employees
13. From reigniting the past...to igniting the future – by Philip Sharman

Plus!  
Photos from the IFRF 2018 Conference and a collection of special messages

[www.ifrf.net](http://www.ifrf.net) @IFRFOffice #IFRFAt70

## REIGNITING THE...

#IFRFAt70

We start with the 2010s – more specifically 2010 to 2016 – and Neil Fricker, IFRF's last Director during the organisation's 'Livorno era', will be our guide. So, fasten your seat belts and enjoy a bit of more recent time travel...

### Reigniting the... 2010s – a perspective from Neil Fricker, former IFRF Director and investigator



It doesn't seem like a year since I was putting together Monday Night Mail (MNM) 'pieces' from IFRF's office in sunny Livorno. My IFRF credentials' span almost exactly five decades from being an Investigator at the Umuiden Research Centre in the Netherlands in the late 1960s. At that time, I coordinated experimental work on the then new and 'difficult' fuel, natural gas. Who could have imagined then that I would act as interim Director during the transition from Umuiden to Livorno in Italy, let alone reprising this role in 2015 during the preparation for IFRF's move to Sheffield.

While I am looking forward to delving back into several exciting eras of activity (albeit somewhat worried at what photographs of callow young Investigators might be unearthed!), I have been asked to look over my shoulder at the IFRF's research activity during the last six years in Livorno and highlight some of the key items available in the archives that have resonance today and into the future. So here goes...


One focus of IFRF's research from 2010 was collaborative work on two important European Commission (EC) funded projects, namely 'BRISK' (Biofuels Research Infrastructure for Sharing Knowledge) and 'RELCOM' (REliable and efficient COMbustion of oxygen / coal / recycled flue gas mixtures). These two projects, both of which ran from 2012 to 2015, involved multiple partners and utilised some of the excellent combustion rigs that IFRF had access to at Enel's Research Centre in Livorno.

BRISK, as its name indicates, was focused on the dedicated combustion of various biomass feedstocks and the co-combustion of these fuels with coal. Both options are increasingly critical components of power generation and industrial combustion systems in many parts of the world, with perhaps 'dedicated biomass' increasingly being the direction of travel as many countries strive to move to lower carbon futures in line with Paris Agreement targets.

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Throughout 2018, we have received several special messages from some key people and organisations...




"The Queen sends her best wishes to you all for a most memorable anniversary year"

HER MAJESTY QUEEN ELIZABETH II  
The Queen of the United Kingdom  
#IFRFAt70



"I would like to congratulate you on the energy and combustion research work conducted by IFRF as well as your commitment to the promotion of international cooperation on this subject. Also, you can be certain of the wishes that it forms for the good progress of all the events which will mark this strong moment in the life of your organisation."

EMMANUEL MACRON  
President of France  
#IFRFAt70



The Personal Advisor to His Majesty the King and Her Majesty the Queen of the Netherlands wished as a 'wonderful celebration' and 'all the best for the future'.

ROYAL HOUSE  
of the Netherlands  
#IFRFAt70

[www.ifrf.net](http://www.ifrf.net) @IFRFOffice #IFRFAt70



## IFRF QPR Q4: 9. Member and general enquiries

### Type of enquiries:

- MNM subscriptions
- Logo requests
- Library access
- Website logins
- Journal enquiries

### 1 Library requests\*:

- TU Chalmers (1)

\*Down 4 from Q3





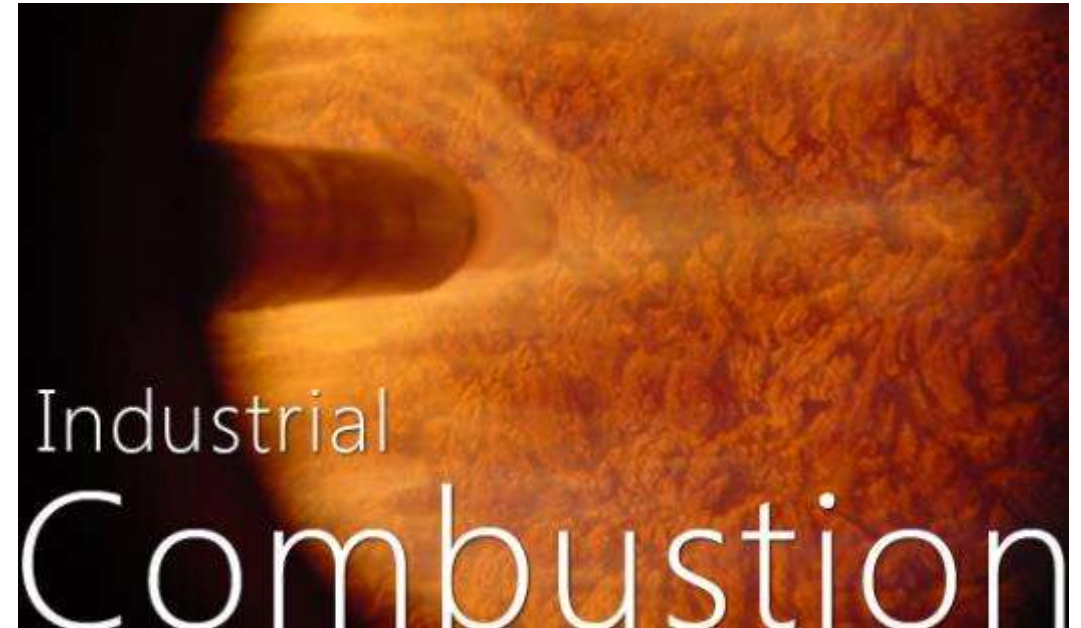
## IFRF QPR Q4: 10. Industrial Combustion Journal

### 2 papers published in Q4 (year to date = 3)

- *'Experimental and Numerical Investigations of Ash Behaviour in Fixed-Bed Combustion of Woody Biomass Pellets'*  
Henrik Ström, TU Chalmers
- *'Exhaust Gas Recycling for Enhanced CO<sub>2</sub> Capture: Experimental and CFD Studies on a Micro-Gas Turbine'*  
Karen Finney, University of Sheffield, UK

### Pipeline

- Sathyabama University, India
- Department of Mechanical Engineering, Amity University Uttar Pradesh, Noida, India
- Department of Mechanical Engineering, LPU, Punjab, India
- Department of Mechanical Engineering, JNTUA, India
- Empresa Colombiana de Petróleos-Ecopetrol, Center of Innovation and Technology-ICP, Colombia
- Angang Steel Co., China
- MLR Institute of Technology, India
- National Institute of Technology Karnataka, Surathkal





# IFRF QPR Q4: 11. 70<sup>th</sup> anniversary

- 'IFRF At 70' e-brochure prepared and published
- 'Congratulatory messages' (14) received from: (16 in total)
  - King of Netherlands
  - Lord Mayor of Sheffield
  - Paul Blomfield MP (Member of Parliament for Sheffield Central)
  - Prof Mike Hounslow, Vice-President and Head of Faculty of Engineering, UoS
  - Energy 2050 / PACT
  - Combustion Institute
  - APGTF
  - IChemE
  - BF2RA
  - UKCCSRC
  - EPSRC's CCS and Clean Fossil Energy Centre for Doctoral Training
  - EUA
  - FERF
  - IOP





## IFRF QPR Q4: 12. IFRF Ltd matters

- ExCo meeting held 20<sup>th</sup> November (virtual)
- Council meeting held 4<sup>th</sup> December (virtual)
- Draft Strategic Review (2018) and Three-Year Plan (2019-2021) prepared for Council meeting
- LLM:
  - Discussions held with SFRC and AFRC
    - SFRC saw no compelling reason to become an LLM
    - AFRC chair to summarise points raised regarding becoming an LLM
  - Total LLMs currently = 3

KPI for end of 2019 = 4 LLMs

