



## Quarterly Progress Report (QPR) Q4 2019

### Marketing Overview

It is a pleasure to share an organization's business performance in the past quarter, opportunities to increase sales and profits for the company's future. Marketing strategy is vital to the success of any business and the effectiveness of a company's marketing strategy is a key factor in its success. The following table shows the results of the company's marketing strategy for the quarter.

Product Categories	Profit per Year				
	2018	2019	2018	2019	2017
General Goods	+101.82	+11.9	+101.82	+101.75	+101.82
Health & Medical	-12.9	+82.24	+101.75	+101.75	+101.75
Art Supply	+52.94	+101.82	+101.75	+101.75	+101.75
Auto & Baby	+101.82	+101.75	+101.75	+101.75	+101.75
Women wear	+101.82	+101.75	+101.75	+101.75	+101.75
Furniture	+101.75	+101.75	+101.75	+101.75	+101.75
Food & Beverage	+101.75	+101.75	+101.75	+101.75	+101.75



# QPR Q4 2019

A. IFRRF Ltd matters

B. Strategy and Governance

C. Membership

D. Research and Training

E. Events and Communications

F. Resources





## A. IFRF Ltd matters (1/1): Overview

#	Goal	Year	Who	SitRep
A1	Increase Limited Liability Members from 3 to 5 in total (by end-2021)	2021	PS	3 – on hold until fees and budget issues resolved
A2	Co-locate and embed IFRF within 'PACT-2' initiative (by end-2021)	2021	PS (GenS)	Building of TERC underway and most large pieces of equipment ordered; scheduled for completion in mid-2020

#	KPI	TGT at 2019	SitRep
1	Limited Liability Members (total)	4	3

### TERC:

'Translational Energy Research Centre' (TERC) - Building of TERC underway and most large pieces of equipment ordered; scheduled for completion in mid-2020

Additional £5m secured to establish a Centre for Sustainable Transport Fuels (very relevant to IFRF) in new building adjacent to TERC





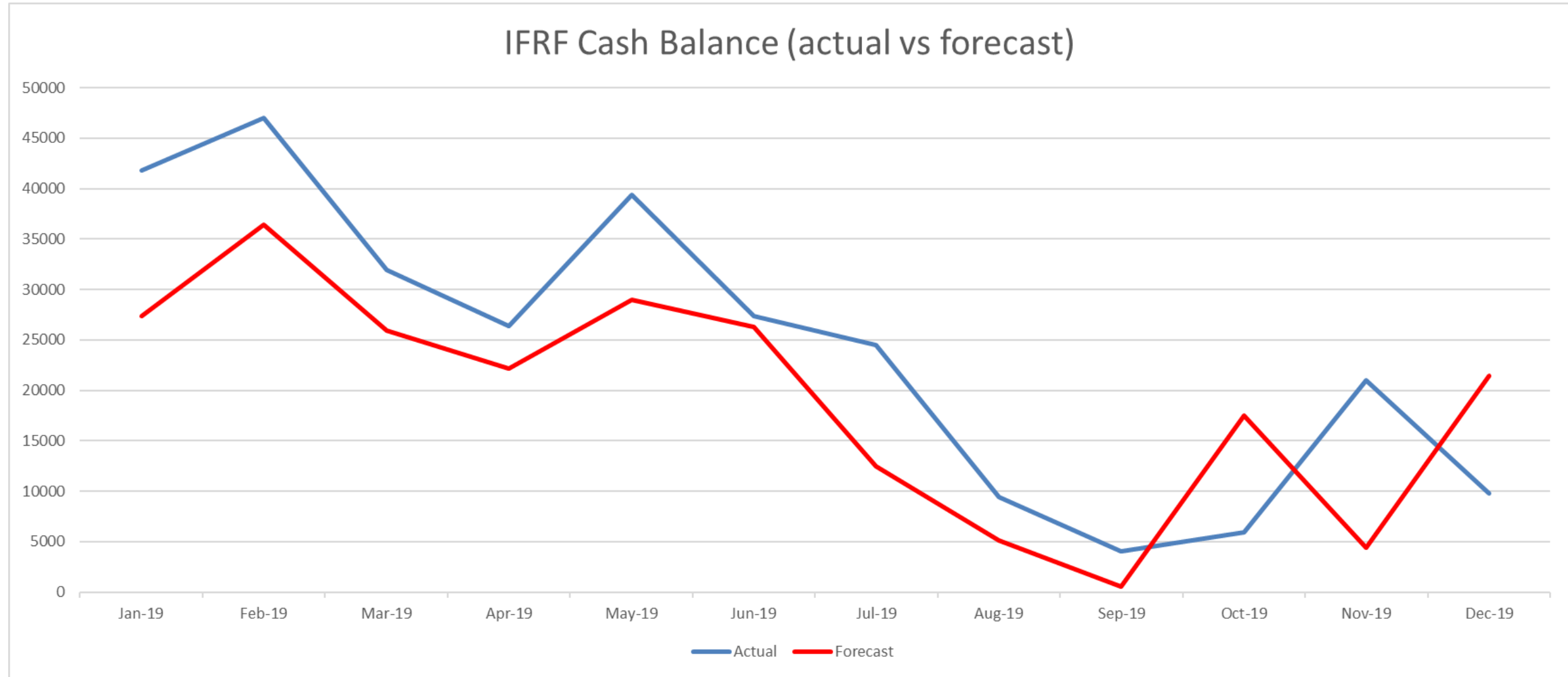
## B. Strategy and Governance (1/3): Overview

#	Goal	Year	Who	SitRep
B1	Update mission, values and vision statements (early-2019)	2019	PS	<b>Completed</b>
B2	Address 'SoR role' on Council (2019)	2019	PS	SoR role developed into VP-Research; NCs encouraged to identify suitable candidates – no nominations received to date
B3	Revise 'Co-opted Specialist' responsibilities on Council and recruit appropriately (2019)	2019	PS	NCs encouraged to identify suitable candidates for 'Environment' and 'EfW' CoS positions – no nominations received to date
B4	Confirm 'additional Council member' to serve on ExCo (early-2019)	2019	PS	<b>Completed</b>
B5	Build a 3-month operational reserve (by end-2021); spend surpluses on research activity	2021	PS (LS)	2020 Budget and Financial Plans agreed and approved by Council [CL(2019)-02]
B6	Try to establish a more consistent NC membership fees structure (2019)	2019	PS (LS)	Council Sub-group formed in November to agree way forward- first telecom held 16/12

#	KPI	TGT at 2019	SitRep
2	Operational reserve (by end-2021)	-	Budget and Financial Plans for 2020 and 2021 agreed by Council [CL(2019)-02]



## B. Strategy and Governance (2/3): Cashflow





## B. Strategy and Governance (3/3): IFRF Council



**Virtual ExCo meeting held**  
18<sup>th</sup> November 2019 - 6 attendees (100%)

**Virtual Council meeting held**  
20<sup>th</sup>-21<sup>st</sup> November 2019 - 10 attendees (62.5%)



**Cashflow monitoring**  
issues relating to delayed and/or reduced membership fee payments from some NCs and impact on cash position (and hence activities) reported to ExCo and Council

### Vice President - Research

- Vice President – NCs encouraged to identify suitable candidates from their members (none received to date)



### Co-opted Specialists:

- NCs encouraged to identify candidates for remaining vacant Co-opted Specialist positions (i.e. 'Environment' and 'EfW') from their members (none received to date)







## C. Membership (1/4): Overview

#	Goal	Year	Who	SitRep
C1	Establish China NC (2019)	2019	PS	CFRC established on Council; paperwork in progress
C2	Re-establish Japan NC, if possible (by end-2021)	2021	PS	Talks to realign JFRC with IFRF ongoing
C3	Develop AMG esprit de corps and use as vehicle for growth in other Asian countries	2019	LS (PS)	AMG community plan implemented; periodic comms continuing
C4	Maintain/grow existing NCs (inc. Italy)	2019	PS	PS attended DVV and CI meetings
C5	Investigate opportunity for core group in Poland and Belgium to form NC (2019)	2019	PS	Decision not to pursue BE; PL TBD
C6	Consider MEA and C&SAM for growth; reactive to opportunities in other regions	2019	PS	PS to visit C&SAM in 2020 (budget permitting)

#	KPI	TGT at 2019	SitRep
3	National Committees (total)	9	9
4	Organisational members (total)	130	130 orgs; 10 individuals

- Events and Communications regarding NCs covered in section E
- PS attended DVV meeting in Stuttgart, Germany and CI meeting in Pisa, Italy



## C. Membership (2/4): NC Breakdown

NB: All membership figures correct at the end of 2019; changes to 2020 membership not included in this report

### AFRC

- 2019 fees paid Dec 2018 (as anticipated)
- 21 organisations; 5 individuals

### CFRC

- 2019 fees paid individually (as anticipated)
- 8 organisations

### FFRC

- 2019 fees paid May 2019 (as anticipated)
- 13 organisations

### BFRC

- 2019 fees paid in July + Dec 2019 (due in June 2019)
- 9 organisations

### CI

- 2019 fees partially paid Jan 2020 (due Dec 2019)
- 10 organisations

### NVV

- 2019 fees paid Dec 2018 (earlier than anticipated)
- 4 organisations

### CF

- 2019 fees paid in Oct + Dec 2019 (due in Sep 2019)
- 18 organisations

### DVV

- 2019 fees paid Feb 2019 (as anticipated)
- 23 organisations

### SFRC

- 2019 fees paid Oct 2019 (due in Feb 2019)
- 9 organisations

### AMG

- 2019 fees paid individually
- 15 organisations; 5 individuals





## C. Membership (3/4): Member Breakdown

130 member organisations

- +1 from Q3 2019
- +10 from Q4 2018

Includes:

- Large industry = 47 (no change)
- Small industry = 30 (no change)
- Academia = 53 (+1 from Q3 2019)

10 individual members

- +1 from Q3 2019
- +1 from Q4 2018





## C. Membership (4/4): Member Enquiries

### Type of enquiries:

- Document requests
- PACT research facilities access
- Change of contact details
- Web access issues

### 3 Library requests\*:

- DTU, Denmark (3)

\*+3 from Q3 2019





## D. Research and Training: Overview (1/3)

#	Goal	Year	Who	SitRep
D1	Expand network of Preferred Research Partners and establish MoUs (inc. in China)	2019	PS	No further progress in Q4
D2	Establish 'mini-projects' initially with UK universities (2019)	2019	PS	2 EngD projects established and underway
D3	Seek opportunities for collaborative R&D projects and react to partnership requests	2019	PS	Promoted H2020 2019 and 2020 Calls in MNM
D4	Co-develop and deliver two pilot training courses (with partners) in 2019-2020	2019	PS (LS)	No further progress in Q4
D5	Develop and deliver one web-based training course in 2019	2019	PS (LS)	Ideas discussed – no progress
D6	Establish support mechanism with UK Centre for Doctoral Training	2019	PS	<b>Completed</b>
D7	Maintain referral and commission arrangement with Green Flames Technology re. probes	2019	LS	Two probes orders received

#	KPI	TGT at 2019	SitRep
5	Preferred Research Partners (total)	3	2
6	Collaborative research projects involving members (total)	1	0
7	Training courses delivered within year (real/virtual)	1	1



## D. Research and Training: Training Proposals (2/3)



### Physical Training

- Safety of combustion
- Operating pilot-scale rigs



### Virtual Training

- Combustion masterclass on flexible operation



**Ideas discussed at CL(2019)01**

**To follow-up ideas to piggy-back on training activities of John Zink in Luxembourg and Cardiff University in UK**



## D. Research and Training: Probes and MoU (3/3)



### Probes

- 1 x Probes order completed with RI:SE (SFRC member)
- 1 x Probes order received from ArcelorMittal (CF member)



## E. Events and Communications: Overview (1/2)

#	Goal	Year	Who	SitRep
E1	Develop and deliver 'IFRF 2021' conference (2021) – location to be decided	2021	LS (PS)	No progress; possible interest in Germany
E2	Co-develop and deliver (with NCs) one TOTeM per year (2019-2021)	2019	LS (PS)	TOTeM46 in Italy 21/11; TOTeM47 in France – abstracts requested, and programme drafted
E3	Support all NCs to deliver Flame Days/Symposia type events annually (inc. China NC)	2019	LS (PS)	Support provided to NVV for COMBURA 2019
E4	Develop and deliver one specialised 'Roundtable Workshop' (by end-2021)	2021	LS (PS)	No progress
E5	Establish two Specialised Networking Gps. (2019-2020); each to hold two webinars/yr.	2019	PS (LS)	Proposals to develop one from TOTeM46
E6	Continue to develop IFRF website as the hub for digital delivery of IFRF's services	2019	LS (ESP)	Ongoing; need to extend RAM due to activity levels
E7	Co-develop and deliver any 'daughter' website/pages requested by any NC	2019	LS (ESP)	APGTF integration underway
E8	Find emailing solution for comms with Chinese members and NC (2019)	2019	LS	<b>Completed</b> (ifrf@outlook.com)
E9	Maintain bi-monthly 'MNM' e-newsletters (i.e. 26/yr.); maintain freshness and balance	2019	LS (PS)	6 MNMs in Q4;
E10	Further develop social media activity: Twitter, LinkedIn, WeChat, and YouTube	2019	LS (PS)	Social media activity update





## E. Events and Communications: Overview (2/2)

#	Goal	Year	Who	SitRep
E11	Review 'Industrial Combustion' online journal; revise Editorial Board and processes (2019)	2019	PS (LS+GenS)	3 papers published in Q4 (4 in total for 2019) following change review
E12	Overhaul and update the online 'Combustion Handbook' (2019-2020)	2019	LS (PS)	Web stats reviewed; PL to analyse content
E13	Maintain publication of 'IFRF Annual Reports'	2019	LS (PS+Pres)	<b>Completed</b>
E14	Close-out '#IFRFat70' PR campaign; launch roll-out of IFRF 3-Year Plan	2019	LS (PS)	<b>Completed</b>
E15	Cooperate/co-market with at least three combustion R&D related orgs.	2021	LS	Joint event held in UK with 8 other organisations 10/2019; information sharing amongst UK organisations; Integration of APGTF website into IFRF website ongoing
E16	Produce updated standard IFRF brochures (e-publish); restock promotional gifts (2019)	2019	LS (PS)	<b>Completed</b>

#	KPI	TGT at 2019	SitRep
8	IFRF Conference delivered	0	0
9	TOTeMs delivered	1	1
10	National Flame Days/Symposia supported	2	3
11	Specialised Networking Groups (SNGs) established and holding webinar meetings (total)	1	0
12	MNMs published	26	26
13	Industrial Combustion journal papers published	6	4



# E. Events and Communications: Events (1/3)

- **TOTeM46 – 21-22 November 2019; Pisa, Italy**  
**‘Waste-to-energy: Status and perspectives of technologies’**
  - 40 attendees
  - Coordinated by CI and IFRF
  - PS presented and attended
  - LS promoted and organised attendees in collaboration with CI
  - Two sponsors
- **TOTeM47 – 5 February 2020; Paris, France**  
**‘Additive manufacturing for combustion application’**
  - Coordinated by CF and IFRF
  - Programme under development
  - Sponsored by Fives

## Other topics under discussion:

- **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

The banner for TOTeM46 features the IFRF logo on the left, the text 'TOTeM' in large white letters with 'TOPIC ORIENTATED TECHNICAL MEETING' below it, and the hashtag '#TOTeM46' on the right. Below this, the title '#TOTeM46 Waste-to-energy: Status and perspective of technologies' is displayed. To the right is a photograph of an industrial facility at night with bright lights. At the bottom, the date '21-22 November 2019; Pisa, Italy' is shown alongside logos for IFRF, a circular emblem, and 'moter', followed by the website 'www.ifrf.net'.

The banner for TOTeM47 features the IFRF logo on the left, the text 'TOTeM' in large white letters with 'TOPIC ORIENTATED TECHNICAL MEETING' below it, and the hashtag '#TOTeM47' on the right. Below this, the title '#TOTeM47 Additive manufacturing for combustion application' is displayed. To the right is a photograph of a bright orange industrial burner or flame. At the bottom, the date '5 February 2020; Paris, France' is shown alongside logos for IFRF, a stylized red diamond, and 'fives', followed by the website 'www.ifrf.net'.



## E. Events and Communications: Events (2/3)

### NC breakdown

#### AFRC

Selection process for new officers  
(AFRC and IFRF)

#### CFRC

No activity in Q4

#### FFRC

Promoted FFD 2020 in MNM

#### BFRC

PS+LS attended 'Clean Energy  
Science Lecture' and Workshop  
(October 2019)

#### CI

PS presented at TOTeM46 and  
attended the CI General Meeting  
in Pisa (November 2019)

#### NVV

Promotion of COMBURA 2019  
(October 2019)

#### CF

Discussions held regarding  
TOTeM47 in Q1 2020

#### DVV

PS presented at the DVV Annual  
Meeting in Stuttgart (November  
2019)

#### SFRC

No activity in Q4

#### AMG

Monthly updates to AMG  
Seeking candidate to represent AMG on Council



# E. Events and Communications: Events (3/3)

## Other meetings attended by IFRF

- Participated in Energy Science Lecture and Workshop (7<sup>th</sup> October 2019) (LS and PS)



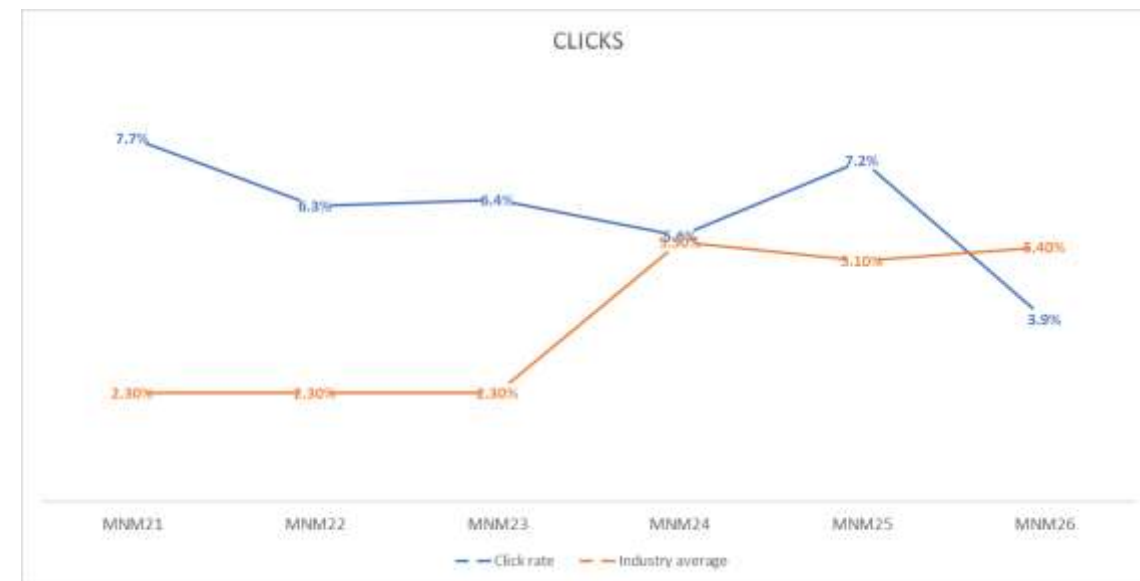




# E. Events and Communications: Comms (1/18)

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

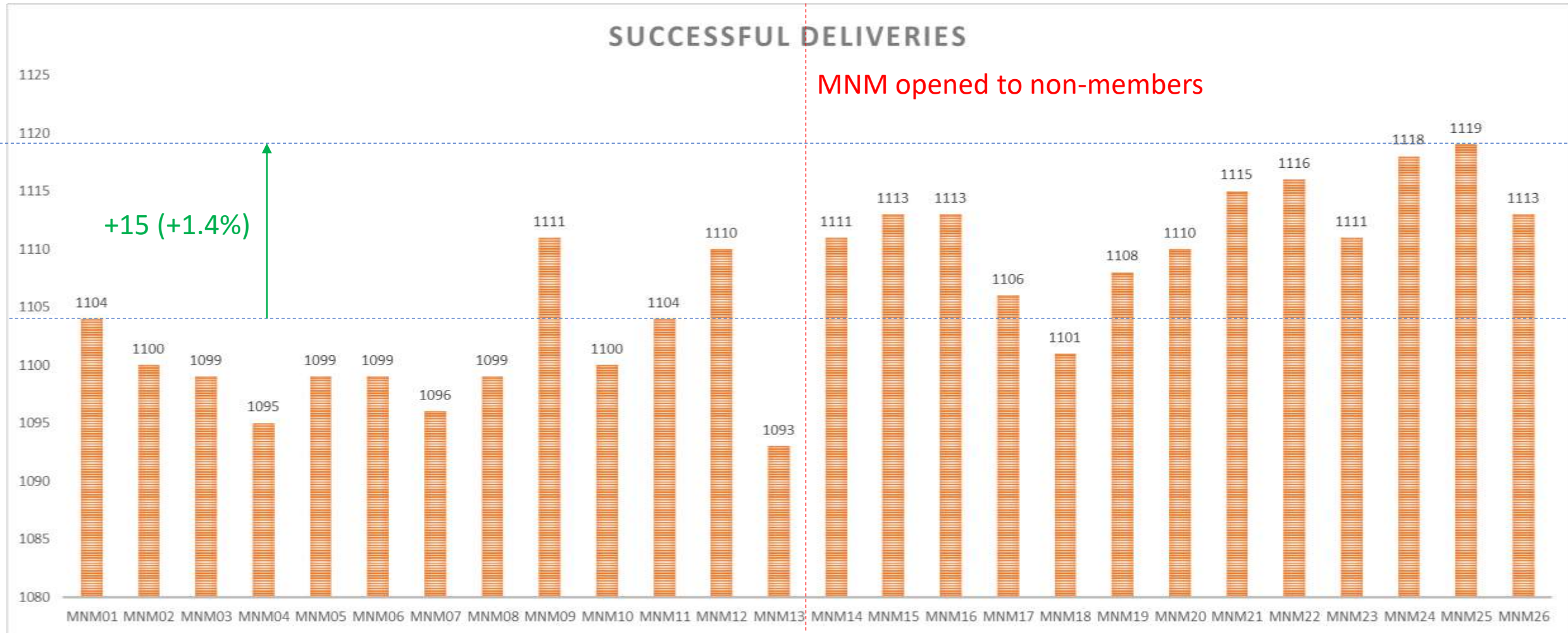
6 MNMs published in Q4





## E. Events and Communications: Comms (2/18)

**MNM - Monday Night Mail (2/5)** Average successful deliveries in 2019 = 1106

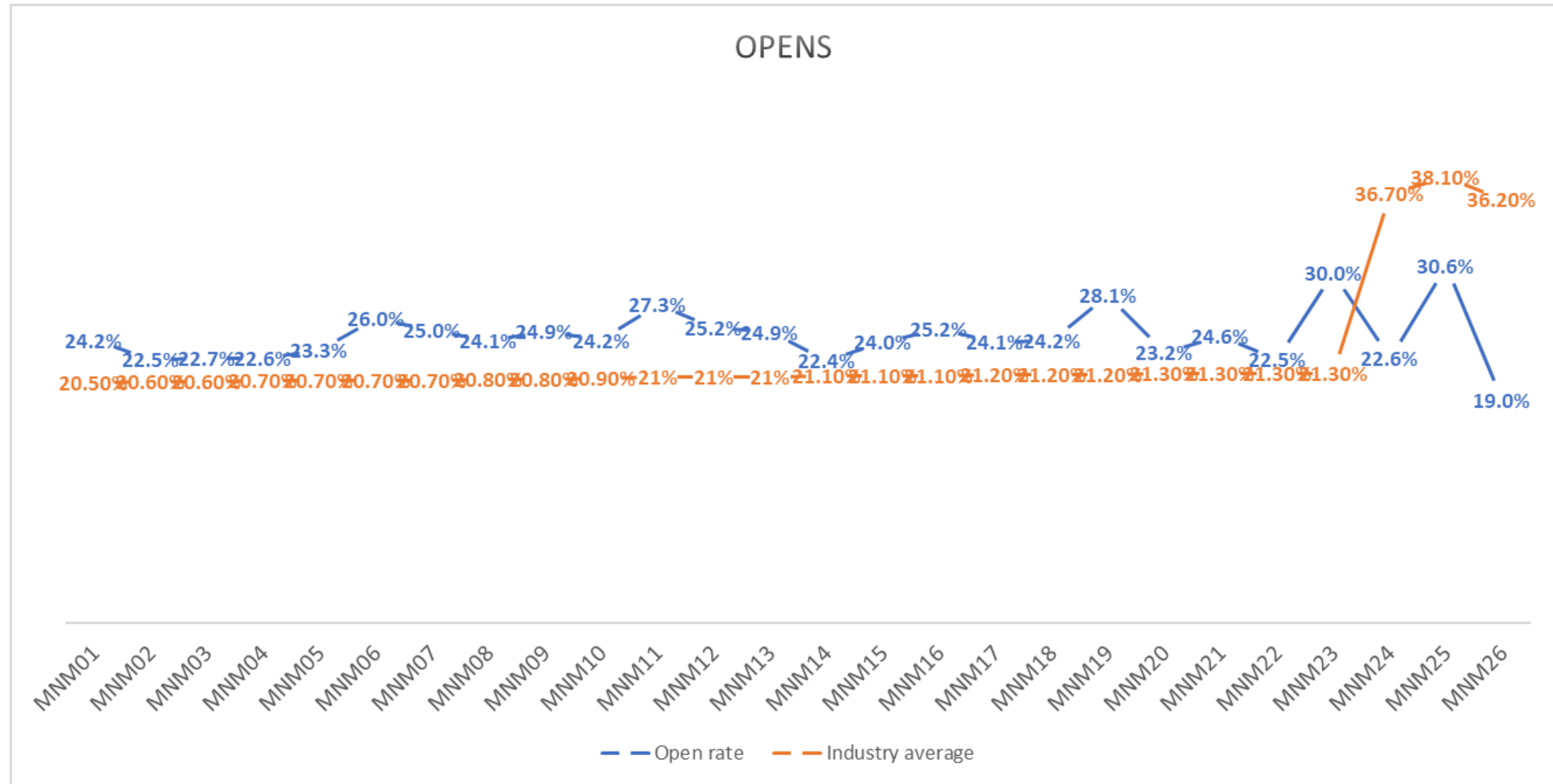






## E. Events and Communications: Comms (3/18)

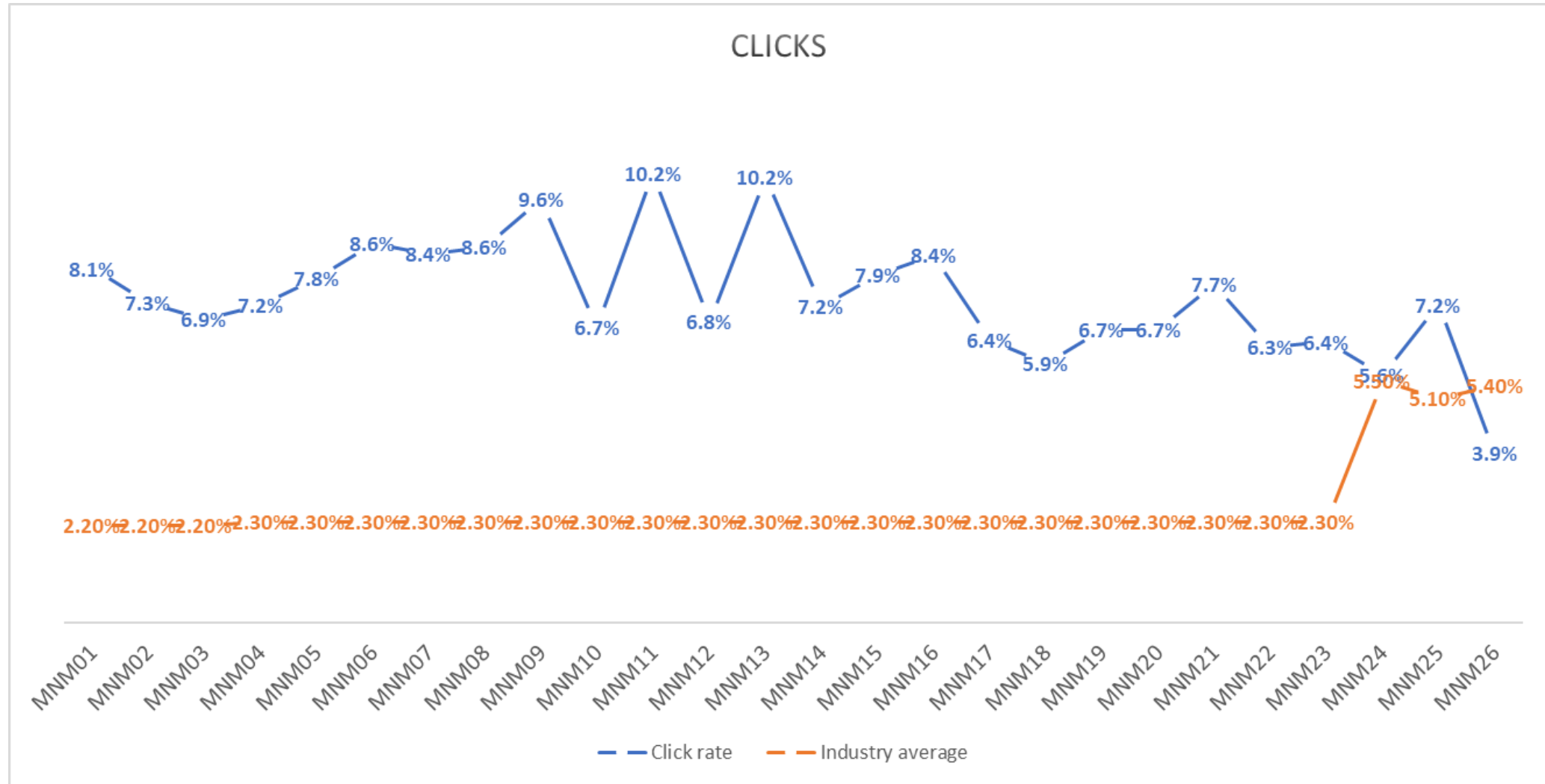
MNM - Monday Night Mail (3/5) Average open rate in 2019 = 24.5%





# E. Events and Communications: Comms (4/18)

MNM - Monday Night Mail (4/5) Average click rate in 2019 = 7.4%





# E. Events and Communications: Comms (5/18)

## 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
MNM21	TOTeM46: Waste-to-energy – Status and perspective of technologies	RJM International rolls out its ultra-low NOx CleanAir Burner™ solution beyond Beijing	List of top 20 carbon polluting fossil fuel companies published
MNM22	TOTeM46: Brochure	The race to ‘net-zero’... What, why, how, where, who, when?	British Flame Day: ‘Applied Industrial Combustion Needs & Cutting-Edge Research Solutions’
MNM23	How to stop aviation emissions climbing up, up and away	TOTeM46 – Waste to Energy: Status and perspectives of technologies	Carbon emissions have peaked in 30 major cities
MNM24	Current green movements - help or hindrance	Clearsign website	CCUS report release identifies numerous recommendations to further deployment of the technology
MNM25	IFRF 2019 Members Survey: Here's what you said	Interest in hydrogen and ‘hydrogen-carrying gases’ continues to grow	IC Journal Paper Published
MNM26	Mission Innovation approaches five-year milestone... Where next?	Power-to-gas and hydrogen admixture into the natural gas grids: impact on industrial firing systems	TOTeM47: Additive manufacturing for combustion application



## E. Events and Communications: Comms (6/18)

### MNM activities:

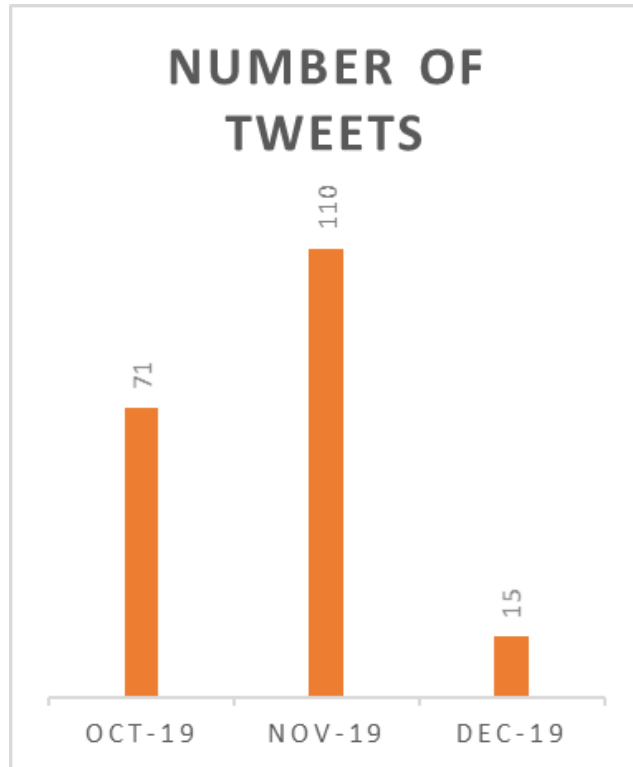
- MNM advertising package launched
- Surveyed members to establish need for audio based sharing of news (i.e. vlogs, podcasts)
- Guest editors this quarter – None from NCs or the Council
- Members profiled this quarter – Bormioli (CI), ClearSign (AFRC)
- Continued promotion of MNM subscription link at all IFRF and NC events and social media



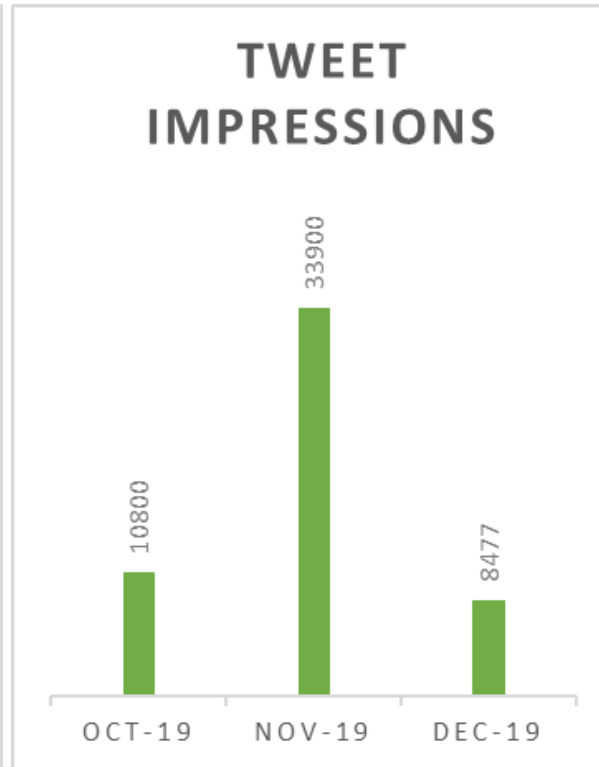


# E. Events and Communications: Comms (7/18)

## Social media (1/6) - Quarterly

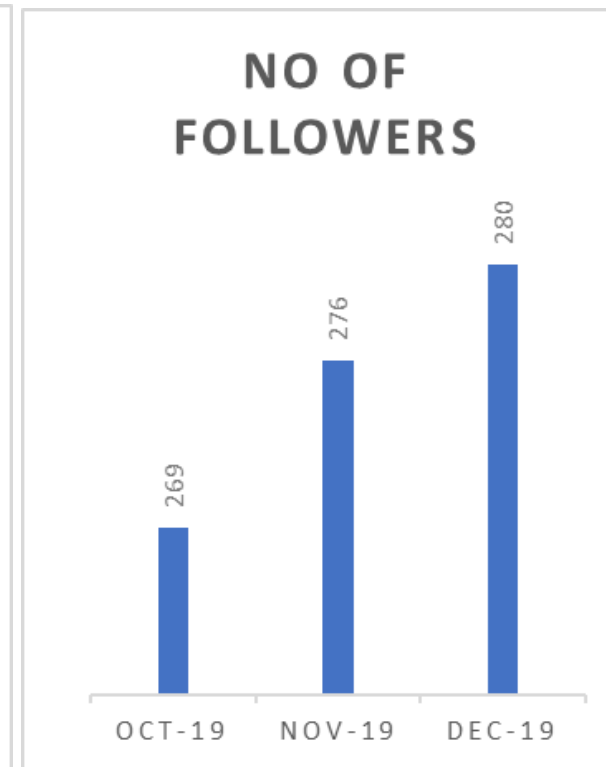


TGT = 40 per month

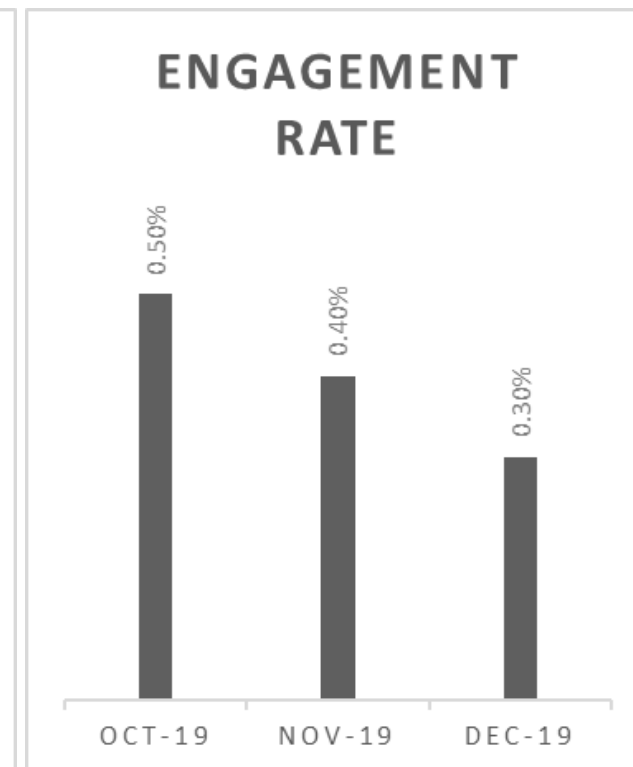


TGT = 10,000 per month

Impressions = reach of tweets



No TGT set



TGT = 1% per month

Rate of an engagement with a tweet (i.e. a retweet) against the number of impressions



# E. Events and Communications: Comms (8/18)

## Social media (2/6) - Annual



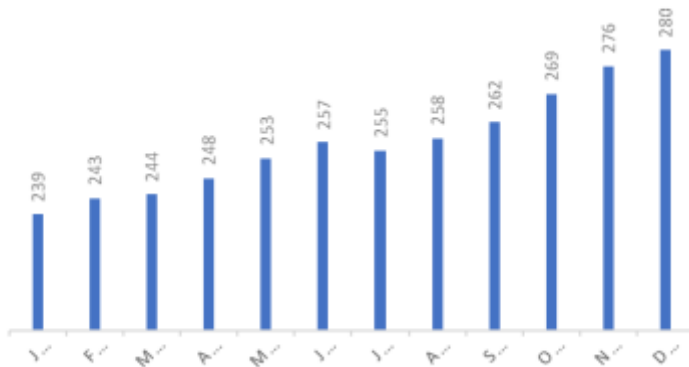
NUMBER OF TWEETS



TGT = 40 per month

Average = 52 per month

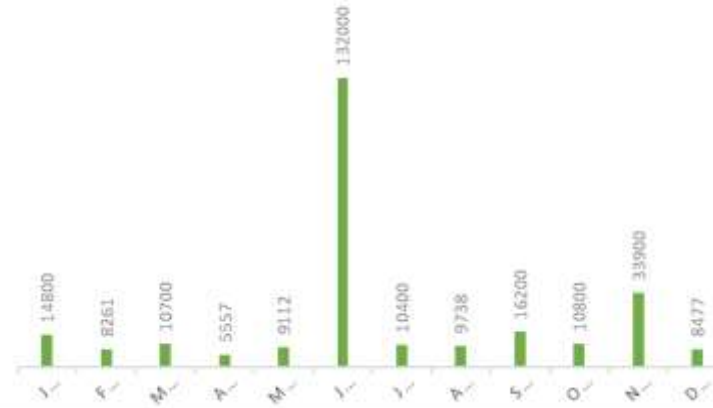
NO OF FOLLOWERS



No TGT set

Average growth = +4 per month

TWEET IMPRESSIONS



TGT = 10,000 per month

Average = 22495 per month

ENGAGEMENT RATE



TGT = 1% per month

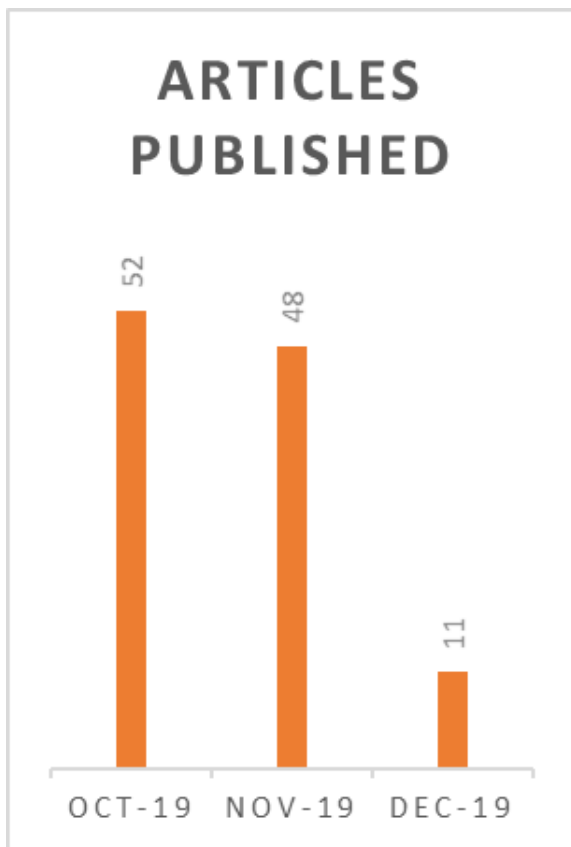
Average = 0.6% per month



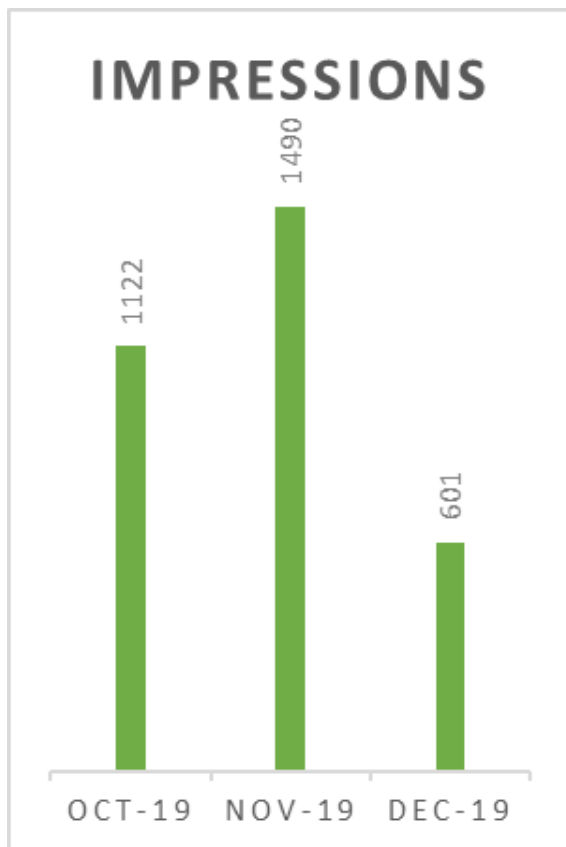


## E. Events and Communications: Comms (9/18)

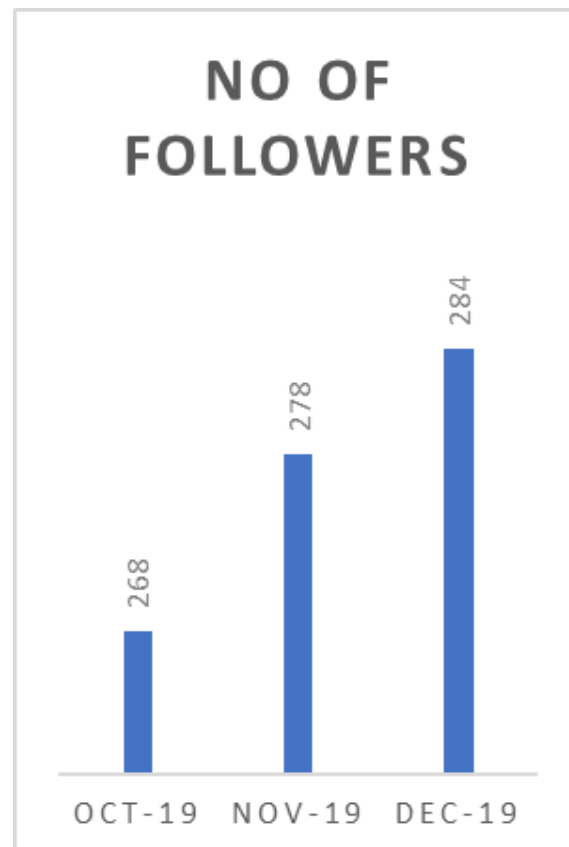
### Social media (3/6) - quarterly



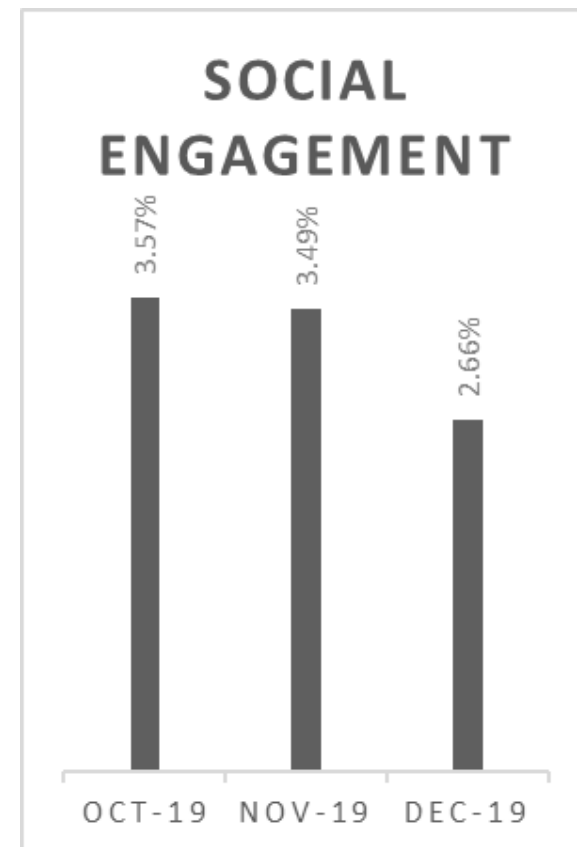
TGT = 40 per month



TGT = 1,000 per month



No TGT set



TGT = 1% per month



# E. Events and Communications: Comms (10/18)

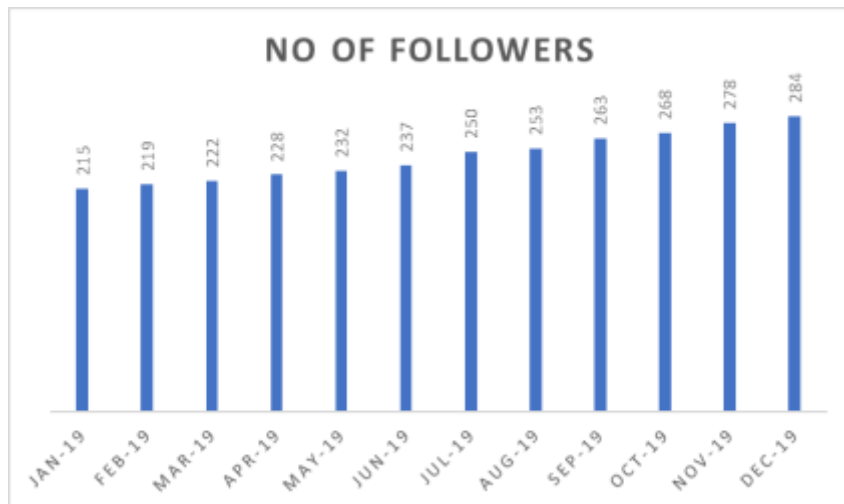
## Social media (4/6) - Annual

## LinkedIn Company page



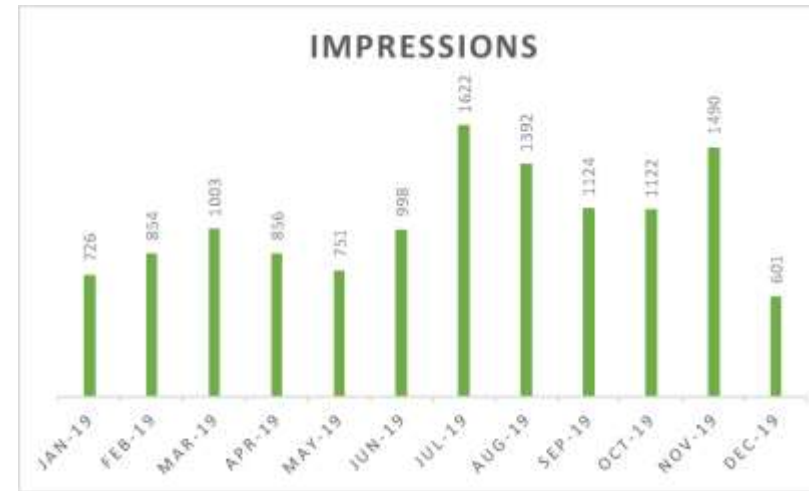
TGT = 40 per month

Average = 39 per month



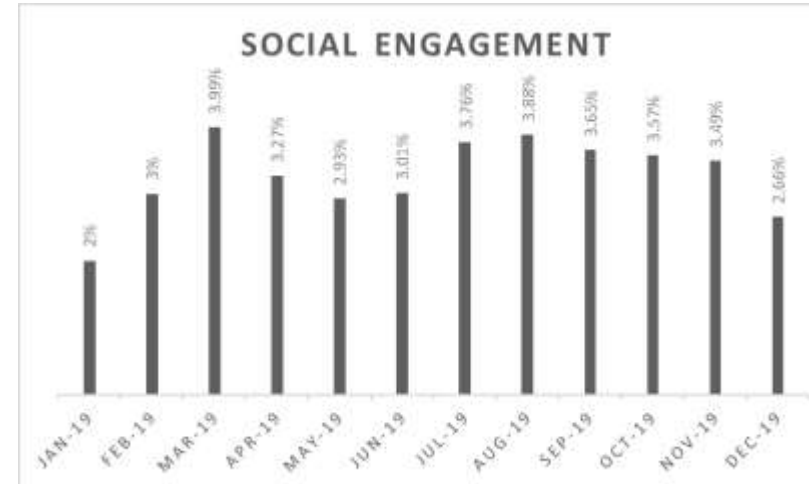
No TGT set

Average growth = +6 per month



TGT = 1,000 per month

Average = 1,045 per month



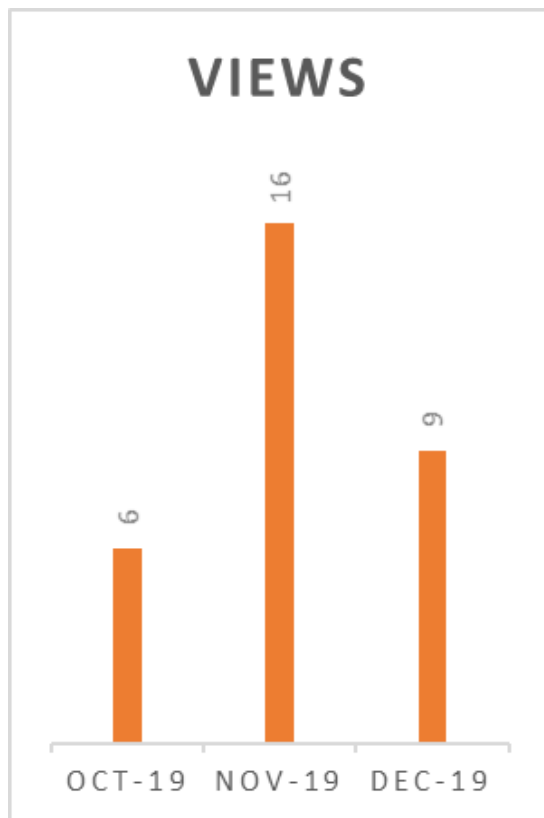
TGT = 1% per month

Average = 3.27% per month

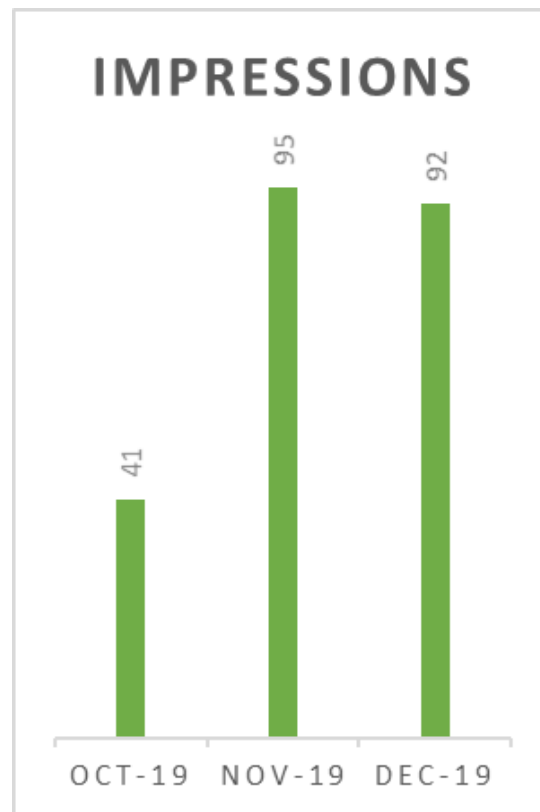


## E. Events and Communications: Comms (11/18)

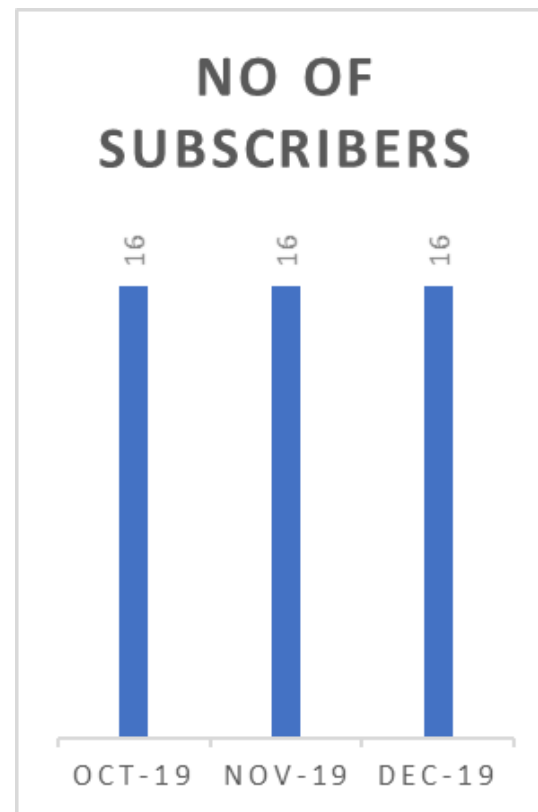
### Social media (5/6)



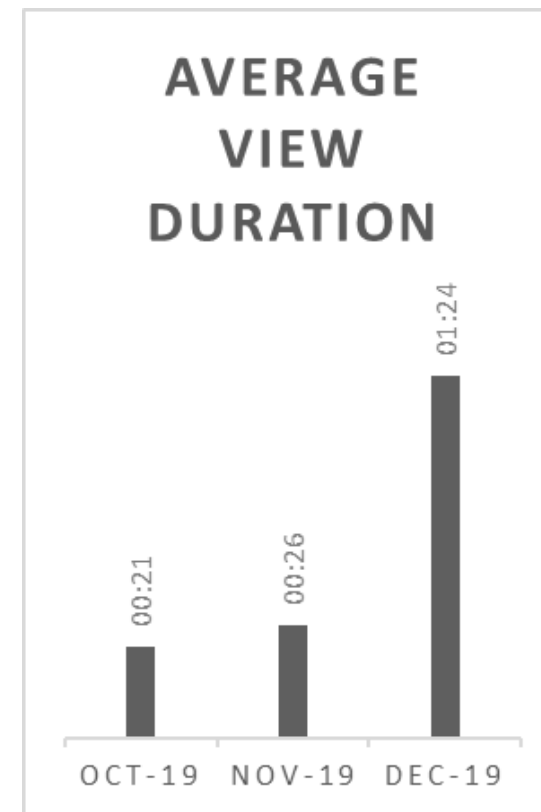
TGT = 15 per month



TGT = 100 per month



No TGT set



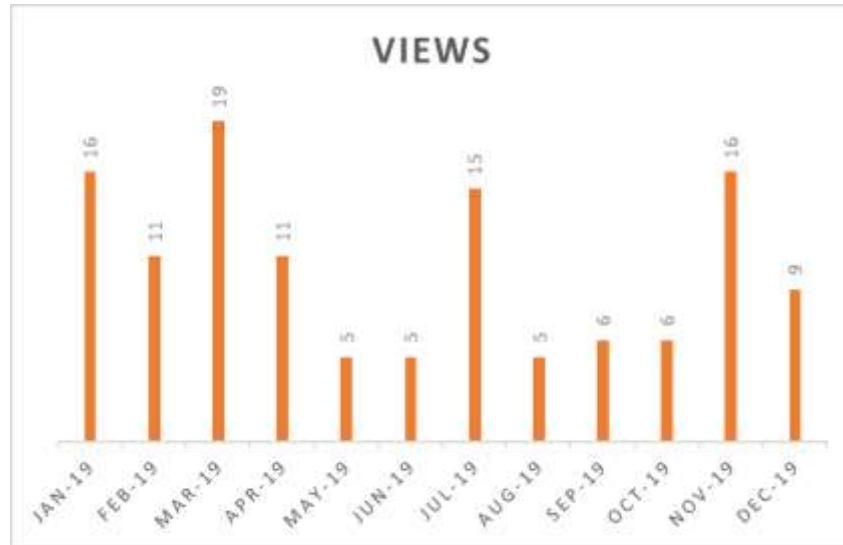
TGT = 1:00 per month



# E. Events and Communications: Comms (12/18)



## Social media (6/6) - Annual



TGT = 15 per month

Average = 9 per month



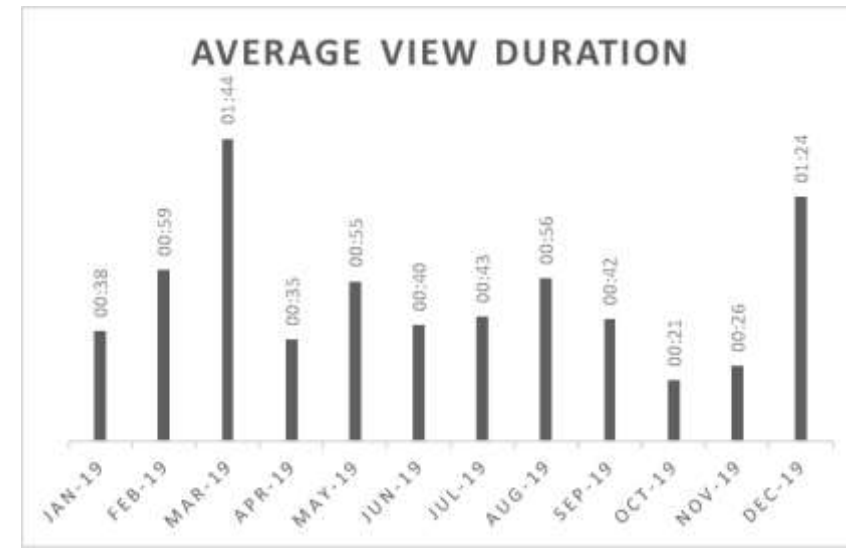
TGT = 100 per month

Average = 73 per month



No TGT set

Average growth = +0.5 per month



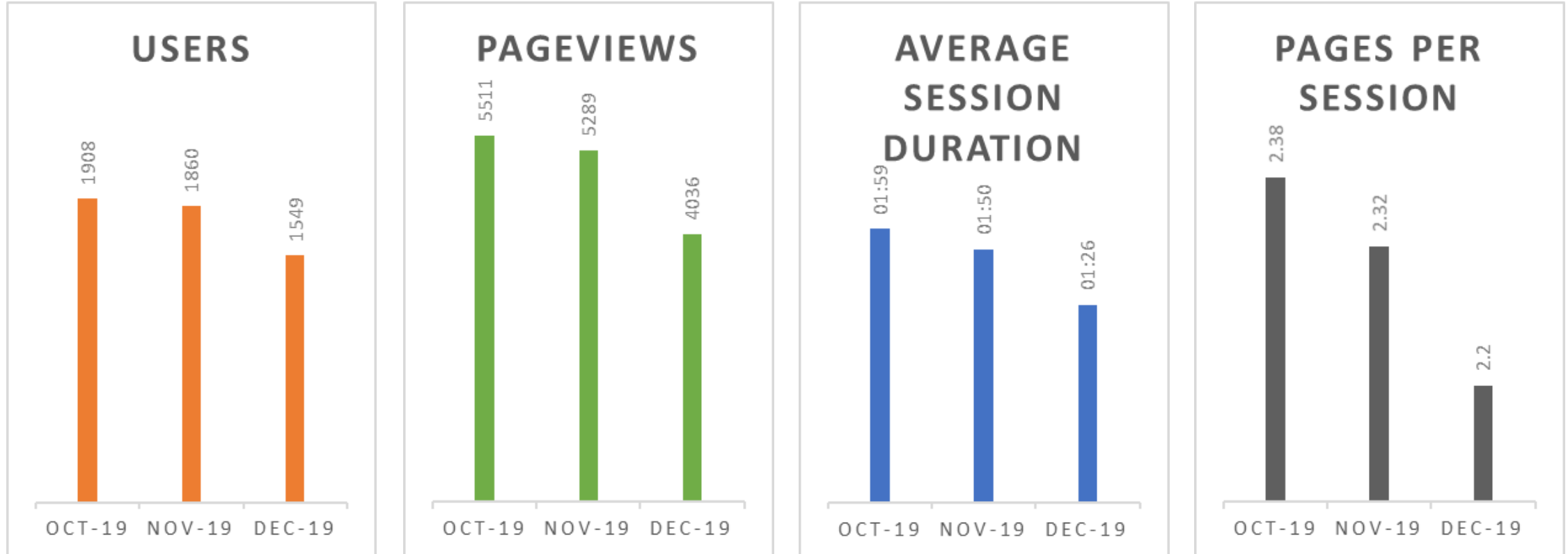
TGT = 1:00 per month

Average = 0:44 per month



## E. Events and Communications: Comms (13/18)

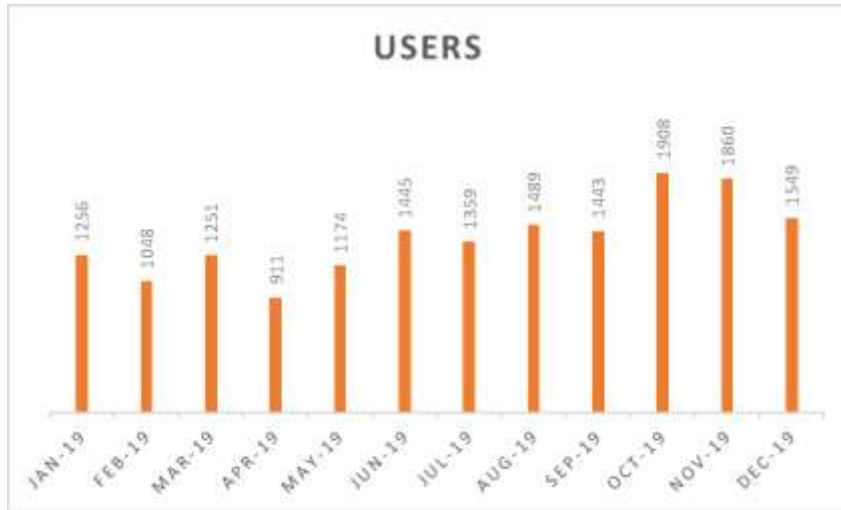
### Website (1/5):





# E. Events and Communications: Comms (14/18)

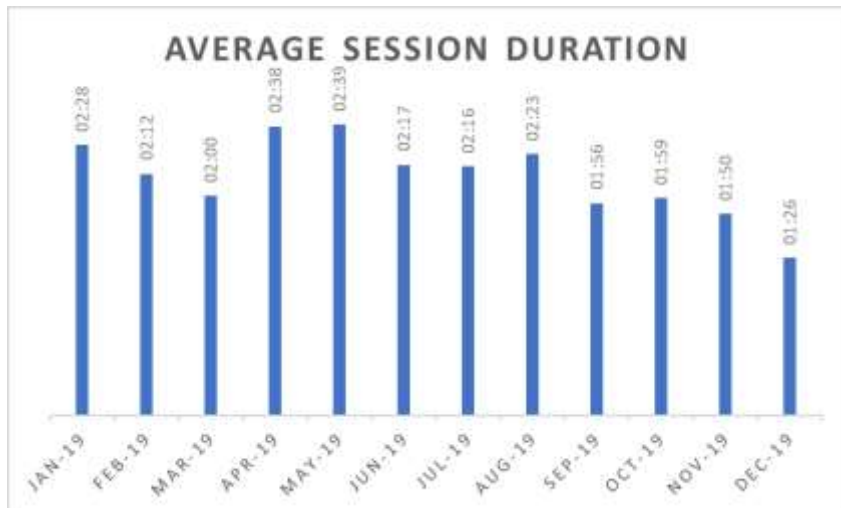
## Website (2/5):



Average =  
1,391 per  
month



Average =  
4,441 per  
month



Average  
growth =  
2:10 per  
month



Average =  
2.59 per  
month





## E. Events and Communications: Comms (15/18)

### Website (3/5):

#### Top 10 users by country

#	Country	Views in Q4
1	UK	↑ 741 (+131)
2	USA	↓ 729 (+40)
3	Germany	= 474 (+183)
4	Italy	↑ 309 (+184)
5	France	= 293 (+102)
6	India	= 194 (+12)
=7	Finland	↓ 178 (-105)
=7	Japan	↑ 178 (+32)
9	Netherlands	↓ 170 (-7)
10	South Korea	= 135 (+16)

Key: Green arrows indicate that the number of views from the country or page has moved up the table since last quarter; a red arrow indicates the number of views have moved down the table. A blue equals sign indicates the country or page is in the same place as last quarter.

#### Top 5 pages viewed

#	Page	Views in Q4
1	Home	= 1333 (+225)
2	IFRF Blog: Green & blue hydrogen	↑ 475 (+46)
3	Research	↑ 451 (+26)
4	Events	↑ 393 (+63)
5	News and blogs	= 383 (-26)

#### Top 5 news articles viewed

#	Page	Views in Q4
1	'Green' and 'blue' hydrogen for a low-carbon European economy?	475
2	INFUB-12: 12th European Conference on Industrial Furnaces and Boilers	230
3	Ammonia – an emerging marine fuel?	202
4	TOTeM46: Waste-to-energy – status and perspectives	181
5	Hydrogen securing supplies for a colourful future	144



## E. Events and Communications: Comms (16/18)

### Website (4/5):

#### Top 10 users by country

#	Country	Views in 2019
1	USA	2893
2	UK	1955
3	Germany	1071
4	France	765
5	Italy	673
6	Finland	612
7	India*	571
8	Netherlands	509
9	South Korea*	425
10	Japan*	415

\*Does not currently have a National Committee as part of IFRF

#### Top 5 pages viewed

#	Page	Views in 2019
1	Home	4896
2	EVENT: Nordic Flame Days 2019	2563
3	Research	1776
4	News and blogs	1575
5	IFRF Blog: Green & blue hydrogen	1464

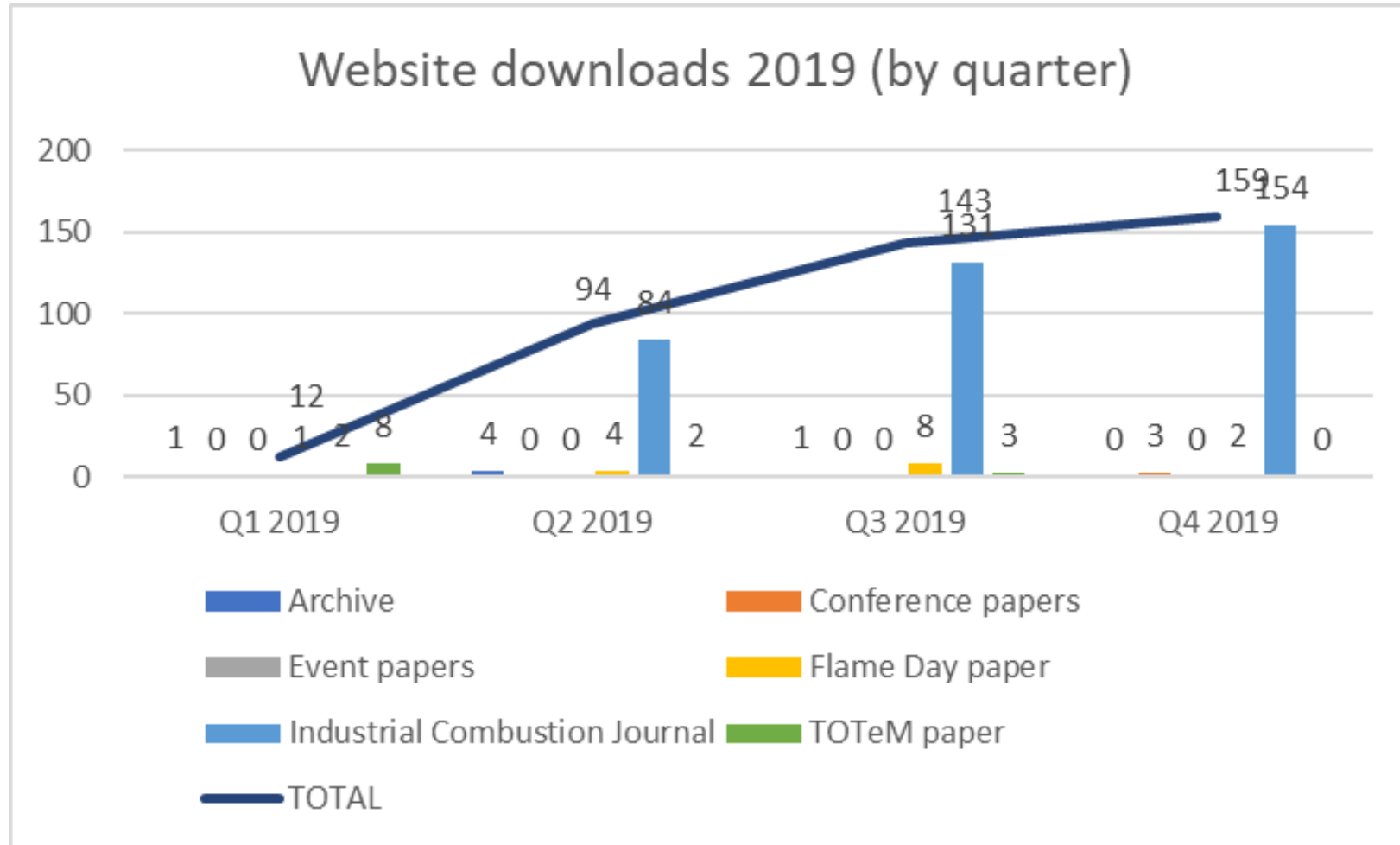
#### Top 5 news articles viewed

#	Page	Views in 2019
1	'Green' and 'blue' hydrogen for a low-carbon European economy?	1464
2	Ammonia – an emerging marine fuel?	593
3	INFUB-12: 12th European Conference on Industrial Furnaces and Boilers	510
4	Hydrogen: securing supplies for a colourful future	419
5	Progress at Wheelabrators 55000 tonne year energy from waste plant at Kelmsley, UK	259



## E. Events and Communications: Comms (17/18)

### Website (5/5): Downloads



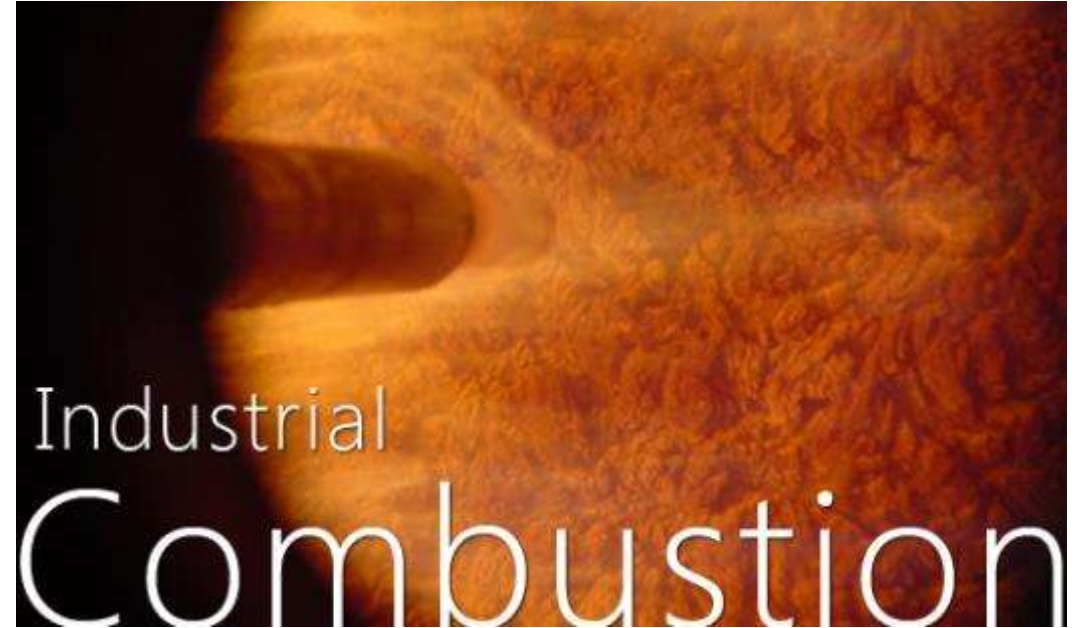


## E. Events and Communications: Comms (18/18)

### Industrial Combustion Journal (1/1):

**3 papers published in Q4 (2019 total = 4)**

- No papers submitted for review in Q4
- Number in progress = 0
- Number rejected = 4
- Number removed due to lack of response from authors = 3
- Changes implemented in Q3 have meant the backlog has been cleared and the turn around time for publication has improved





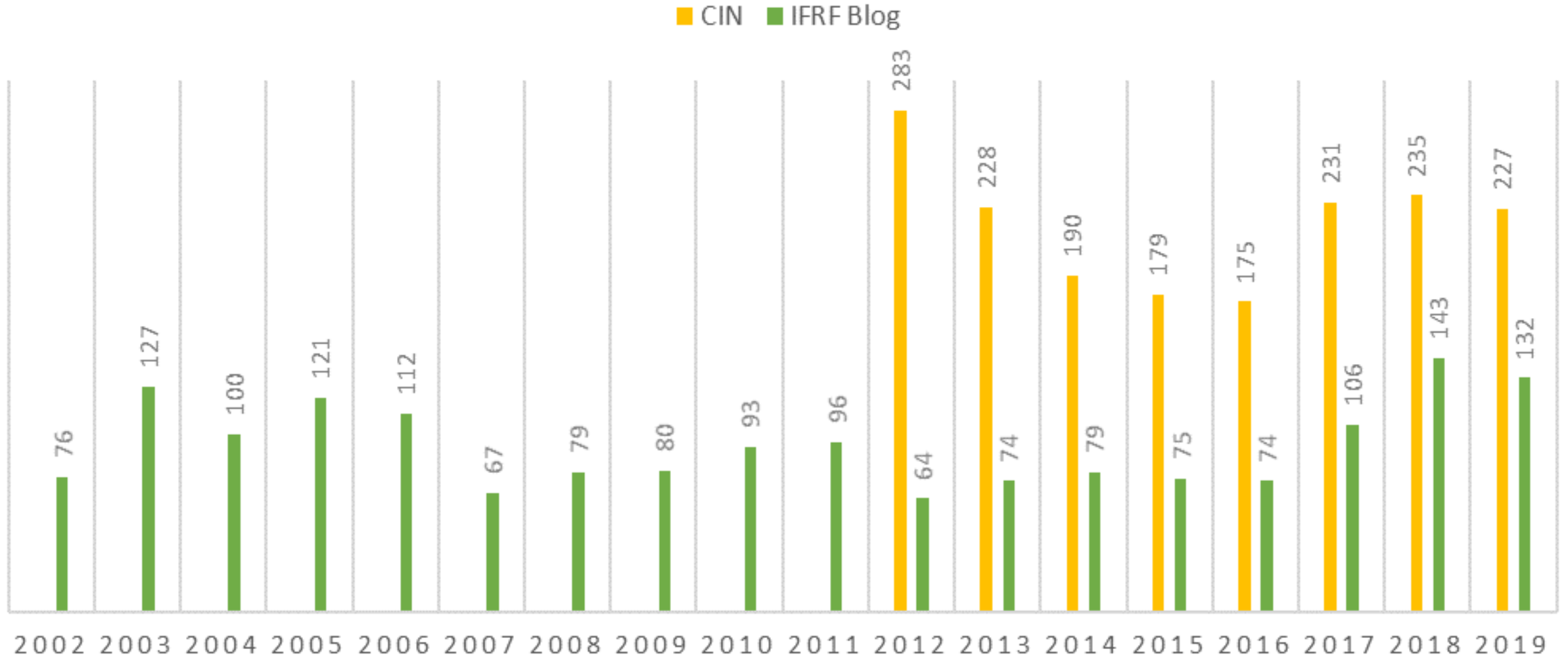
## F. Resources

#	Goal	Year	Who	SitRep
F1	Contract Exec Dir for 96 days/yr. (2019) at affordable dayrate (fixed for three years) – annual	2019	GenS	<b>Completed</b>
F2	Increase Lucy Straker's employment from 90% FTE to full-time w.e.f. 1/1/2019	2019	PS	<b>Completed</b>
F3	Maintain current level of effort from Patrick Lavery; negotiate CIN rate annually	2019	PS (PL)	<b>Completed</b>
F4	Contract other ad hoc support on project/item basis as needed, costs borne by project/item	2019	PS	Frank Rhodes used for APGTF integration
F5	Increase T&S budget to £15k/yr. as affordable [to £10k/yr. as appropriate]; maintain all other overhead budget lines	2019	LS	<b>Completed</b>

- Discussions continued with MP regarding LS being contracted to work on TERC communications



# IFRF Blogs and CIN articles published





# Industrial Combustion Journal papers published

