

CLINGENDAEL
INTERNATIONAL
ENERGY
PROGRAMME

| CIEP

ANNUAL REPORT 2017



May 2018

CIEP is an independent forum for governments, non-governmental organisations, the private sector, media, politicians and all other parties interested in changes and developments in the energy sector and energy related climate change issues.

CIEP organises lectures, seminars, conferences and roundtable discussions. In addition, CIEP staff members lecture in a variety of courses and training programmes. CIEP also contributes to international and European debates on energy by actively participating in numerous international conferences and expert workshops – where research findings are disseminated and inputs for further research are gathered. CIEP’s research, training and activities focus on economic and geopolitical dimensions of international energy and energy transition. CIEP is affiliated to the Netherlands Institute of International Relations ‘Clingendael’.

In 2017 CIEP is endorsed by The Netherlands Ministry of Economic Affairs and Climate Change, The Netherlands Ministry of Foreign Affairs, The Netherlands Ministry of Infrastructure and Water Management, BP Europe SE-BP Belgium/ BP Europe SE-BP Nederland, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ('Rabobank'), ENGIE Energie Nederland N.V., ENGIE E&P Nederland B.V. (the latter is now known as Neptune Energy Netherlands B.V.), Delta N.V. (until 1 September 2017), Eneco Holding N.V., EBN B.V., Esso Nederland B.V., GasTerra B.V., N.V. Nederlandse Gasunie, Heerema Marine Contractors Nederland B.V., ING Wholesale Banking N.V., Nederlandse Aardolie Maatschappij B.V., N.V. NUON Energy, TenneT TSO B.V., Oranje-Nassau Energie B.V., Havenbedrijf Rotterdam N.V., RWE Generation NL B.V., Shell Nederland B.V., TAQA Energy B.V. (until 31 December 2017), Total E&P Nederland B.V., Koninklijke Vopak N.V., Wintershall Nederland B.V.

CIEP publications and research results are made available primarily through the CIEP website: www.clingendaelenergy.com

Title : CIEP Annual Report 2017
Copyright : 2018 CIEP
Published by : Clingendael International Energy Programme
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A YEAR OF CONTRADICTION SIGNALS

In the first part of 2017, many headlines were captured by the new Trump administration, also on energy. In a short space of time, some of Obama energy and climate policy decisions were revoked, such as the Keystone XL pipeline and the Dakota Access Pipeline, and the dismantling of the Clean Power Plan. With the “America-First Offshore Energy Strategy” the Trump Administration made millions of acres of federal waters in the Arctic and Pacific and Atlantic Oceans eligible for oil and gas leasing, including marine sanctuaries, although immediate local opposition reduced the scope of this executive order. The Trump Administration also tried to turn the tide for the American coal industry, but low natural gas prices are a considerable stumbling block to realise his promise. And on 1 June 2017, Trump announced that the US will pull out of the 2015 Paris Climate Agreement. In the space of a few months, the Trump Administration set a new tone in international energy and climate markets. With the upsurge in US oil and gas production, the US Administration has begun to use the term energy dominance. Rather than weakening the resolve of other countries to reduce CO₂ emissions, the US decision strengthened countries in both Asia and Europe to stick to their pledges, albeit for different reasons. Nevertheless the changing tone in the international debate, the US continues to show year-on-year reductions in CO₂ emissions, mainly due to the switch from coal to gas in power and industry. With the exception of Japan, Mexico and the UK, CO₂ emissions increased in most major economies from 2016 to 2017, including China and the EU.

The management of growing and declining energy industries is going to challenge international energy relations, because sufficient investments are needed to guarantee their availability at reasonable prices during the long global transition. Yet, we also know from past transitions that managing such changes smoothly over time is incredibly difficult and bound to exacerbate boom and bust cycles. To be sure, we still do not fully understand the impact of new energy technologies in our markets beyond a certain share, nor do we fully comprehend the size of infrastructure expansion to make a smooth transition possible, and finally, we do not really understand the socioeconomic drivers of accepting new energy technologies when they need to be more than an add-on. From previous transitions, we learned that both the comfort level of the new energy technology, security of delivery and its affordability matter.

In 2017, many of the post-Paris studies were completed and a certain can-do mentality began to dominate the transition debates. Electrification of demand features in many of these studies, but also clean molecules began to take centre stage. The early successes of the offshore wind industry biddings opened up a vision of a new energy province in the North Sea. Many competing claims on the green power now dominate the discussions on energy transition and exactly how to bring this energy source to shore. Integrated energy system transition or sector coupling has replaced a transition discussion only focussed on the power sector.

China and the US are the largest investors in solar and wind. With the rapid decline in costs, new power capacity in many countries includes solar and wind. Low interest rates certainly play a role, but also, in case of China, the need to manage energy imports. The decision to benefit electric car purchases over those with an ICE drive train is an indication that oil demand and oil import management is an important driver, given the power mix of the country. Also in the energy rich countries in the Middle East, the large demand for cooling and drinking water has led to increased investments in solar capacities to prevent a larger claim of the power sector on available oil or gas production.

2017 finally brought some stability to oil prices around \$50 a barrel and, after a summer dip, in the fall a steady increase to about \$65 a barrel at the end of the year, 2017 was still a year full of political and economic uncertainties for international energy markets. The remarkable recovery of shale oil and gas production and the increase in US exports to world markets came as a surprise to the OPEC plus group that had hoped to steady international oil markets more quickly by withholding barrels from the market. Instead they had to renew their production policy to June 2018 in order to continue to work away the relatively large stocks. In 2017 the spread between WTI and Brent increased again, underpinning the upsurge in production in the US. In late 2017, US production crossed the 10 million barrels per day production mark, and it is predicted that in 2018 US production will even surpass the highest average production year so far 1970. Light tight oil has developed in the space of a few years from a marginal source to a medium cost source. Moreover, investors have in the past few years preferred the short investment cycle of shale over capital intense (long term) conventional projects. This preference for short cycle energy investments has benefitted the shale industry and renewables. Economic uncertainty and government policies to reduce GHG emissions play an important role, but also the appetite of certain investors to decarbonise their portfolios has been important.

European natural gas prices recovered slightly in 2017, from a low \$4,26 to \$6,56 per mbtu. EU natural gas production further declined, in part due to difficult economic circumstances in relatively high cost production areas, and in part due to successive Dutch government decisions to lower production after increased seismicity in the Groningen field region. The loss of flexibility is perhaps more important for the NW European gas market than the loss of substantial volumes. The Netherlands plays an important role in balancing flows. As a result of declining production, imports of natural gas increased. In the current oversupplied market, LNG has difficulty to compete with low cost pipeline flows, but in a few years, when the international natural gas market is expected to tighten, competition for additional gas flows (particularly LNG) will be among the consumers. The market with the best price will attract most gas. Whether this will be the EU remains to be seen because the traditional market players purchasing gas have lost their appetite for securing natural gas flows in the longer term, while industrial natural gas demand, although under discussion in transition debates, remains substantial and will change only slowly.

The understanding of the volume and time dimensions of energy transition in the various demand sectors is far from understood and will require much more research to begin to understand the impacts on international energy markets. At the same time, international (energy) relations are changing too. The uncertainty about the international order will feed into the solution space for countries with regard to their CO₂ emission reduction policies.

Most of the developments mentioned above have been the subject of CIEP papers and events in 2017 and will continue to be key elements of the agenda in the fifth project period (2017-2020) of CIEP.

BOARD OF THE FOUNDATION: STICHTING FONDS INSTITUUT CLINGENDAEL (SFIC) IN 2017

Drs. G.J. Lankhorst, chairman
J. van Hoof, RA, treasurer
Mr. W.O. Russell, member
Ir. R. Willems, member
Mw. Mr. I. L. Van Veldhuizen, member
Ir. J.M. van Roost, member

The Clingendael International Energy Programme (CIEP) is a project of Stichting Fonds Instituut Clingendael (SFIC) since 1 September 2001. Each project period lasts four years. In 2017 a new (fifth) project period started and lasts until the end of 2020.

CIEP SUPPORTING INSTITUTIONS

In 2017, the following institutions supported CIEP:

BP Europe SE- BP Nederland
Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ('Rabobank')
Delta N.V. (until 1 September 2017)
Dutch Ministry of Economic Affairs and Climate Change
Dutch Ministry of Foreign Affairs
Dutch Ministry of Infrastructure and Water Management
EBN B.V.
Eneco Holding N.V.
Esso Nederland B.V.
Havenbedrijf Rotterdam N.V.
Heerema Marine Contractors Nederland B.V.
GasTerra B.V.
ENGIE Energie Nederland N.V.
ENGIE E&P Nederland B.V. (now known as Neptune Energy Netherlands B.V.)
ING Wholesale Banking N.V.
Koninklijke Vopak N.V.
Nederlandse Aardolie Maatschappij B.V.
N.V. Nederlandse Gasunie
N.V. NUON Energy
Oranje-Nassau Energie B.V.
RWE Generation NL B.V.
Shell Nederland B.V.
Statoil ASA
Taqa Energy B.V. (until 31 December 2017)
TenneT TSO B.V.
Total E&P Nederland B.V.
Wintershall Nederland B.V.

These institutions are a cross-section of energy sector stakeholders in the Netherlands and beyond. The companies are major international players in their field of expertise. The institutions contribute to CIEP's knowledge base and *vice versa*, especially within the CIEP Advisory Board and the Contact Group. Furthermore, staff members from the institutions participated actively in CIEP brainstorm groups, such as the Gas Group, the Oil Group, and the Fuel Mix Group.

CIEP STAFF

In 2017, the CIEP staff comprised the following employees:

Coby van der Linde	director	(1.0 fte)
Pier Stapersma	senior researcher	(1.0 fte)
Luca Franza	researcher	(1.0 fte)
Daan Rutten	researcher	(1.0 fte) (until 31 March 2017)
Maurits Kreijkes	researcher	(1.0 fte)
Michiel Nivard	researcher	(1.0 fte)
Diederik Klip	researcher	(1.0 fte) (until 1 October 2017)
Iulia Pisca	researcher	(1.0 fte) (until 1 December 2017)
Wendy Auf dem Brinke	assistant	(0.8 fte)
Marco Blankestijn	fin. administrator	(0.2 fte equi.)

In addition to the research staff, senior fellows and associate fellows contributed to CIEP's work and network:

Dick de Jong	honorary fellow	(from 1 August 2017)
Dick de Jong	senior fellow	(until 1 August 2017)
Jacques de Jong	senior fellow	(0.10 fte)
Maria van der Hoeven	senior fellow	
Geert Greving	senior fellow	(from 1 August 2017)
Christian Cleutinx	associate fellow	(project basis)
Aad Correljé	associate fellow	(project basis)
Pieter Boot	associate fellow	(project basis)
Martien Visser	associate fellow	(project basis)
Jan Hein Jesse	associate fellow	(project basis)

During 2017, the following students/interns contributed to the activities of CIEP:

Tristan Wanders	student intern TUD (until 31-3-2017)
Kyle Ferriggi	student intern RUG (from 1 September- 15 December 2017)

Other functions held by CIEP director:

- Member of the Wise Person group of the IGU (since 2004)
- Member of Regieteam Topsector Energie and vice chair TKI Wind WoZ
- Member of the Supervisory Board of Wintershall Nederland B.V. (WINL) and Wintershall Noordzee B.V.
- Member of the Supervisory Board of Alliander N.V.
- Member of the international advisory board of KAPSARC (King Abdullah Petroleum Study and Research Center), Saudi Arabia

CIEP NETWORK

Many of our activities and studies are conducted in cooperation with partner organisations in the Netherlands and abroad. Over time a wide network of researchers has developed. The intensity of contact depends on the project at hand, but in general many of the contacts continue in other projects. We are also regularly approached to participate in consortia of researchers, , in which CIEP decides to participate on a case by case basis depending on the relevance of the project for the public agenda. The network of energy researchers is global, and each year new partners join the network. Some relations with research and activity partners have become very close and a variety of interactions take place every year, from keeping in touch on current issues to organising conferences and conducting joint studies. In April 2017, for instance, we jointly organised an international oil workshop with Kapsarc in The Hague.

INTERNAL ORGANISATION

CIEP administers the allocation of staff and budgets to the different activities, research projects and other pursuits. CIEP uses time registration (BigBen software), which facilitates prioritising time and assets.

CIEP PUBLICATIONS

The following overview highlights a selection of 2017 publications, most of which are available on CIEP's website (www.clingendaelenergy.com/publications). CIEP (associated) staff also published articles elsewhere, which are listed under the tab "other work" (www.clingendaelenergy.com/otherwork). In 2017 CIEP published 2 research papers and 3 briefing papers.

CIEP PAPERS

- The European refining Sector: A diversity of Markets, Michiel Nivard and Maurits Kreijkes, June 2017.
- The Transition of the Residential Heating System, Diederik Klip, May 2017.

BRIEFING PAPERS

- European Union Industrial Energy Use with a focus on Natural Gas, Iulia Pisca, December 2017.
- Speaking Notes: Integrated Energy System Transition, September 2017.
- Looking under the Hood of the Dutch Energy System, Maurits Kreijkes, February 2017.

COLUMNS

The 2017 columns of Coby van der Linde (<http://www.clingendaelenergy.com/columns>), Pieter Boot, and Martien Visser appeared at Energieforum (www.energieforum.nl) and on the CIEP website.

EVENTS/ACTIVITIES

CIEP organised various events (meetings, training programmes, conferences, etc.) in 2017. See the list of events below, which is also available on <http://www.clingendaelenergy.com/events>; select 2017:

13 April 2017	Corporate Perspectives on Energy Transition: Port of Rotterdam, Allard Castelein
18 April 2017	Understanding the Energy Transition II, Oil in a 2 degree world, Kapsarc/CIEP
16 May 2017	ExxonMobil Outlook for Energy - A view to 2040
6 June 2017	Corporate Perspectives on Energy Transition: Innogy, Peter Terium
22 June 2017	BP Outlook 2030 and Statistical Review 2017, Richard de Caux
7 September 2017	CIEP/Nogepa Gasday

23 November 2017 Presentation of IEA The World Energy Outlook 2017, Tim Gould (IEA)
12 December 2017 Corporate Perspectives on Energy Transition; RD Shell, Maïke Boggemann

TRAINING

1 June 2017 International Oil and Gas Markets
30 November 2017 Integrated Energy System Transition

CIEP also facilitated a two-day training programme for the Diplomatic Institute to the Ministry of Foreign Affairs of the Republic of Bulgaria in Sofia (26-27 September 2016; Jacques de Jong and Michiel Nivard).

Luca Franza and Coby van der Linde also taught the course 'International and European Gas Markets' in the Energy Master programme of SciencesPo in Paris in January-March 2017.

Coby van der Linde also taught a half-course on energy security at Groningen University in February-March 2017.

CIEP also contributed to training programmes directed to government officials, diplomats, personnel of international organisations and energy professionals, organised among others by the Clingendael Institute, Energy Academy and the Energy Delta Institute (EDI), Florence School of Regulation and CEER.

CIEP MEETINGS

Board Stichting Fonds Instituut Clingendael

24 May 2017
4 December 2017

Advisory board

22 June 2017
12 December 2017

Contact group

7 March 2017
13 June 2017
10 October 2017
6 December 2017

Fuel mix Group

24 January 2017
16 March 2017
25 April 2017
10 October 2017

Gas Group

16 March 2017
11 May 2017
29 June 2017
5 October 2017
30 November 2017

Oil group – in 2017 the researchers met with the members of the oil group in other/private meetings concerning the research projects and invited some members to the Kapsarc seminar in April 2017

LECTURES, SPEECHES, PRESENTATIONS, MEDIA

During 2017, CIEP staff members gave numerous lectures, speeches, and presentations or chaired sessions during training courses, conferences and seminars. CIEP staff in 2017 also gave various radio, television and written media interviews.

EXTERNAL LECTURES/PRESENTATIONS

18 January 2017	Visit 'Young Heerema'. Presentation on Looking in the Energy Crystal Ball; opportunities and challenges in the next few years. Franza and van der Linde
23 -24 January 2017	ACER Conference Winter Package (J de Jong)
31 January 2017	Training module in the course on Leadership in International Security at the Geneva Centre for Security Policy; Franza
6 February 2017	European Parliament; Workshop on 'EU Energy Independence, Security of supply and diversification on Sources'. Van der linde
9 February 2017	Presentation for ENGIE Energy Nederland 'Women in Energy Network'
24 February 2017	VNPI Refinery Commission; Kreijkes, Nivard, van der Linde
9 March 2017	Enduris; Stapersma
30 March 2017	Deltalinqs, Presentation 'Kansen voor CO2 als grondstof'; van der Linde
19 & 20 April 2017	KAPSARC/CIEP 2-day Workshop in The Hague on; 'Understanding the Energy transition' ; van der Linde
26 April 2017	Lecture on geopolitics of international oil and gas markets for Korps Marines, Den Helder; van der Linde
8 May 2017	Panelist at the Netherlands-Russia Energy Roundtable at the Russian Trade Delegation in Amsterdam; Franza
12 May 2017	Gasunie; meeting shareholders representatives; van der Linde
12 May 2017	Roundtable Port of Rotterdam, Port of Amsterdam, Vopak, Oitanking etc.; van der Linde
19 May 2017	Presentation for The MENA network (an internal employee network at RD Shell) on Iran, The Hague; van der Linde
23 May 2017	Ministry of Economic Affairs; 'macro-economic brainstorm meeting on the speed of transition; introduction; van der Linde
1 June 2017	Lecture 'Botlek study group' Kreijkes and Nivard.
7 June 2017	Presentation at Festival dell'Energia, Milan; Franza
8 June 2017	Energy Event Dutch pension funds, Rotterdam; van der Linde
14 July 2014	Presentation on Global LNG developments at the EU-India Energy Summit – College d'Europe, Bruges – July 2017; Franza
1 September 2017	Lecture 'Energiezekerheid' Erasmus University 'Young Port Professionals'; van der Linde
28 September 2017	Repsol Conference "Energy for Europe' panel "Energy diplomacy in today's geopolitical arena'; van der Linde
2 October 2017	Representing CIEP at the Expert Roundtable on Nord Stream 2 EPC Brussels; Franza
9 October 2017	Port of Antwerp - i.z. dialoog waterstofeconomie; Stapersma and van der Linde
11 October 2017	Rabobank lecture for Global Energy Heads; van der Linde
11 October 2017	Panelist at the Conference on the European Common Security Policy at SWP Berlin; Franza
13 October 2017	Biofuels Workshop Amsterdam; Nivard
19 October 2017	Presentation IGU at Wingas; Kreijkes

20 October 2017	Representing CIEP at the Bruegel Workshop on 'Energy in Turkey'
26 October 2017	Begeleidingscommissie Evaluatie WVA; EZK; van der Linde
30 October 2017	ECF Project Transition, Brussel; J de Jong
2 November 2017	Presentation Havendebat Amsterdam 2017; van der Linde
7 November 2017	PriceWaterhouseCoopers 'Industry workshop' ; van der Linde
8 November 2017	Conference on Oil Storage, Spijkenisse; van der Linde
13 -15 November 2017	ADIPEC Conference and meeting with ADNOC – Abu Dhabi; Franza
16 November 2017	OIES workshop - The Oil Market Dichotomy: Supply Crunch or Glut?, Oxford; van der Linde
20 November 2017	'German Energy Day 2017', Berlin-Brandenburgische Akademie der Wissenschaften/WEC; van der Linde
23 November 2017	Training module in energy security at the Naval Base in Amsterdam; Franza
1 December 2017	Presentation pre-refinery forum, Brussels; Nivard and Kreijkes
8 December 2017	Presentation students TU Delft 'offshore company day TU Delft'; van der Linde
18 December 2017	Training Saudi Aramco Overseas, Rijswijk; van der Linde

OTHER EXTERNAL MEETINGS

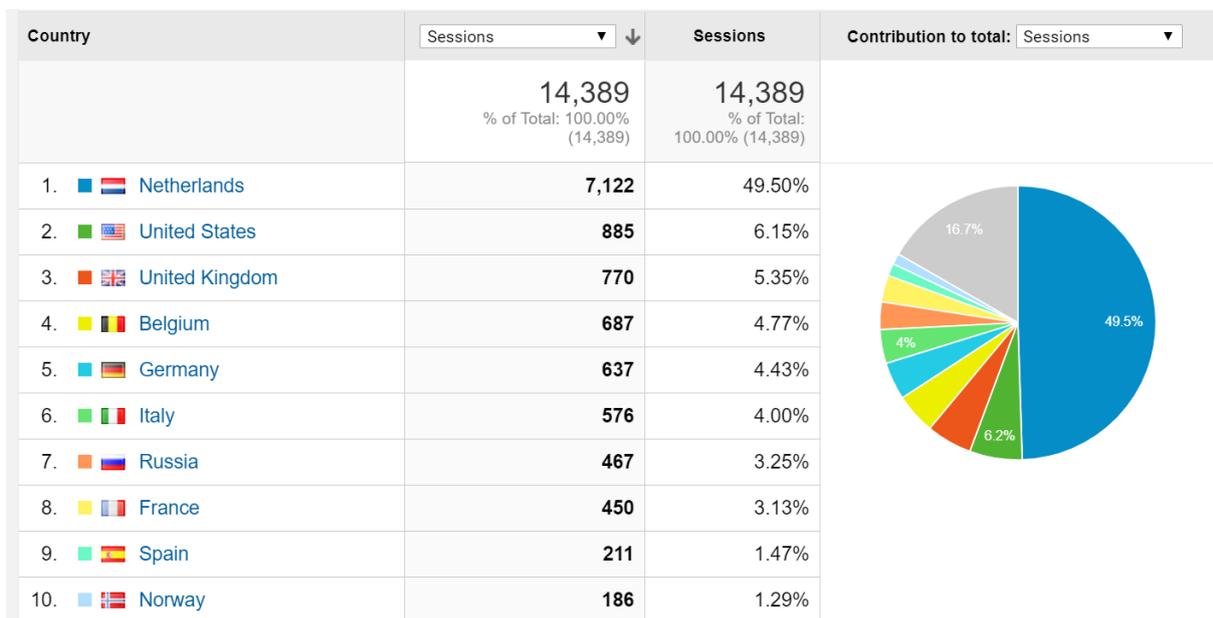
10 January 2017	Visit Chinese delegation from various organisations (mainly Beijing/Tianjin area e.g., Chinese Academy of Social Sciences, one of the leading think tanks in China) as part of a visit to Royal Vopak N.V.; van der Linde
11 January 2017	AET Topteam & Regieteam Energie meeting; Van der Linde
17 January 2017	Visit Port of Antwerp (Brussels) & DBV-GL. Dialogue on energy transition; Stapersma and van der Linde
24 January 2017	Platts European Oil Storage Conference; Kreijkes en Nivard
2 February 2017	McKinsey Dutch Energy Roundtable; van der Linde
3 February	Roundtable Port of Rotterdam, Port of Amsterdam, Vopak; van der Linde
6 February 2017	Visit Stefan Moser, Security of Natural Gas Supply, Brussels; D de Jong and van der Linde
23 – 24 February 2017	Participation CEPS Ideas Lab, Brussels, J de Jong
9 March 2017	Policy Council Florence School of regulation, Florence; J de Jong
14 March 2017	Consulted as expert in the context of Italy's National Energy Strategy Workshop, Rome; Franza
23 March 2017	Consulted as expert in the context of the International Energy Charter Industry Advisory Panel Meeting, Warsaw; Franza
12 April 2017	TKI Woz – Topteam Energy; vz. van der Linde
April+November 2017	Participation in Policy Council Florence School of regulation,; J de Jong
22 May 2017	Lunch meeting delegation of Saudi Arabian female entrepreneurs organized by Ministry of Foreign affairs.
19 June 2017	CEPS event 'Power intensive industries in a low emissions future'; Pisca
23 June 2017	Ministry of Foreign Affairs; Raw Materials Conference 'No Energy Transition without Raw Materials' ; Stapersma
27 June 2017	Representing CIEP at Climate Diplomacy Week event at German Embassy in NL
29 June 2017	event The Future perspective of energy storage and conversion; The Hague; Klip
30 August 2017	Ministry of Economic Affairs presentation Berenschot; Stapersma
12/13 September 2017	Participation CEPS DNV Flexibility Panel, Brussel; J de Jong
21 September 2017	KAPSARC East Africa Workshop in Paris; Franza

2-4 October 2017 Participation in Policy Council Florence School of regulation, Florence
 7 November 2017 validatiesessie routekaart chemie 2050, Berenschot Utrecht; Kreijkes
 22–23 November 2017 Participation in HL Round Table Barings/Eurogas on the future of gas in EU markets, London

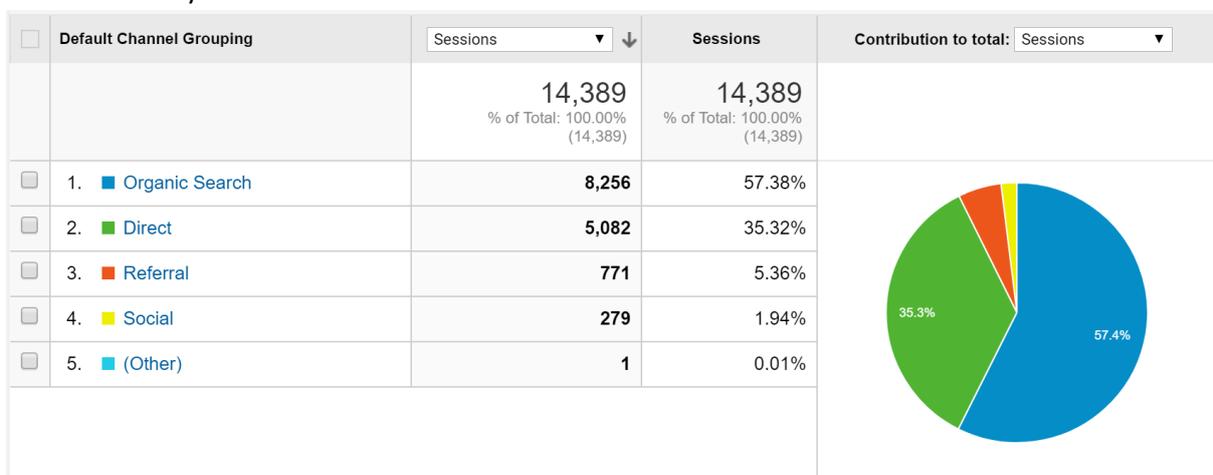
WEBSITE

Everything CIEP published or organised from 2001 onwards, could be found at www.clingendaelenergy.com. Internet is an important communication and information dissemination tool for CIEP.

This is where our visitors came from in 2017:



This is how they reached us in 2017:



Unique page visits to our publications in 2017:

		7,761 % of Total: 25.84% (30,035)	7,761 % of Total: 25.84% (30,035)
1.	/publications/publication/looking-under-the-hood-of-the-dutch-energy-system	863	11.12%
2.	/publications/publication/speaking-notes-integrated-energy-system-transition	766	9.87%
3.	/publications/publication/long-term-prospects-for-northwest-european-refining	678	8.74%
4.	/publications/publication/the-european-refining-sector-a-diversity-of-markets	640	8.25%
5.	/publications/publication/long-term-gas-import-contracts-in-europe	557	7.18%
6.	/publications/publication/outlook-for-eu-gas-demand-and-import-needs-to-2025	496	6.39%
7.	/publications/publication/the-transition-of-the-residential-heating-system	451	5.81%
8.	/publications/publication/outlook-for-lng-imports-into-the-eu-to-2025	275	3.54%
9.	/publications/publication/outlook-for-russian-pipeline-gas-imports-into-the-eu-to-2025	262	3.38%
10.	/publications/publication/prospects-for-sustainable-diversification-of-the-eus-gas-supply	230	2.96%
11.	/publications/publication/outlook-for-gas-imports-from-new-suppliers-into-the-eu-to-2025	175	2.25%
12.	/publications/publication/the-changed-geopolitics-of-energy-and-climate	170	2.19%
13.	/publications/publication/the-new-dimensions-of-geopolitics	140	1.80%
14.	/publications/publication/study-eu-energy-supply-security-and-geopolitics	134	1.73%
15.	/publications/publication/from-south-stream-to-turk-stream	123	1.58%
16.	/publications/publication/russias-oil-export-strategy-two-markets-two-faces	114	1.47%
17.	/publications/publication/transition-what-transition	101	1.30%
18.	/publications/publication/the-energiewende-and-germanys-industrial-policy	80	1.03%
19.	/publications/publication/crude-oil-markets-in-2015-the-battle-for-market-share	66	0.85%
20.	/publications/publication/european-union-industrial-energy-use-with-a-focus-on-natural-gas	63	0.81%

Unique page visits for events in 2017:

		1,897 % of Total: 6.32% (30,035)	1,897 % of Total: 6.32% (30,035)
1.	/events/event/ciep-nogepa-gas-day	645	34.00%
2.	/events/event/presentation-of-the-2016-world-energy-outlook	156	8.22%
3.	/events/event/exxonmobil-outlook-for-energy-a-view-to-2040	152	8.01%
4.	/events/event/bp-statistical-review-of-world-energy-2017	144	7.59%
5.	/events/event/ciepnogepa-gas-day	132	6.96%
6.	/events/event/presentation-iea-weo-2017-	118	6.22%
7.	/events/event/corporate-perspectives-on-energy-transition-allard-castelein-port-of-rotterdam	111	5.85%
8.	/events/event/lecture-series-corporate-perspectives-on-energy-transition-peter-terium-innogy	79	4.16%
9.	/events/event/ciep-training-integrated-energy-system-transition	58	3.06%
10.	/events/event/save-the-date-presentation-iea-weo-2017-	44	2.32%
11.	/events/event/dutch-energy-policy-frontier-economics-scenarios-for-the-dutch-electricity-supply-system	28	1.48%
12.	/events/event/save-the-date-gasday	26	1.37%
13.	/events/event/save-the-date-exxonmobil-outlook-for-energy-a-view-to-2040	24	1.27%
14.	/events/event/save-the-date-lecture-series-corporate-perspectives-on-energy-transition-peter-terium-innogy	15	0.79%
15.	/events/event/developments-in-international-refining	14	0.74%
16.	/events/event/ciep-energy-lecture-by-spencer-dale-chief-economist-bp	12	0.63%
17.	/events/event/ciep-gas-day	11	0.58%
18.	/events/event/ciep-training-european-energy-markets-and-policy-making-	11	0.58%
19.	/events/event/the-political-and-economic-impact-of-the-shale-revolution	8	0.42%
20.	/events/event/ciepnogepa-gas-day-2015	6	0.32%

Unique page visits 'overall' in 2017:

Page	Unique Pageviews	Unique Pageviews	Contribution to total: Unique Pageviews
	30,035 % of Total: 100.00% (30,035)	30,035 % of Total: 100.00% (30,035)	
1. /	6,022	20.05%	
2. /publications	2,059	6.86%	
3. /about_us	1,347	4.48%	
4. /about_us/staff	930	3.10%	
5. /publications/publication/looking-under-the-hood-of-the-dutch-energy-system	863	2.87%	
6. /events	824	2.74%	
7. /publications/publication/speaking-notes-integrated-energy-system-transition	766	2.55%	
8. /publications/publication/long-term-prospects-for-northwest-european-refining	678	2.26%	
9. /events/event/ciep-nogepa-gas-day	645	2.15%	
10. /publications/publication/the-european-refining-sector-a-diversity-of-markets	640	2.13%	

PROJECTS

Ciep contributed in kind to the master class project of Publieke Zaken (for members of parliament) and a research project on the role of gas in energy transition for the IGU.

FINANCES

2017 was the first year of the fifth project period (2017-end of 2020). Income was lower and costs were lower compared to 2016. In 2017, the public research and activities agenda for the project period needed to be completed, leaving little time for projects. The positive result of €98.807 of the public agenda is fully used to complete the work in the Public Agenda in 2017. The overall financial result for 2017 was -€107.321.

	2017	2016	2015
Contribution stakeholders	€ 625.000	€ 715.000	€ 715.000
Project income	€ 31.579	€ 53.341	€ 101.202
Other income or cost	-€ 413	€ 612	€ 4.762
Staff costs	€ 632.828	€ 730.443	€ 544.277
Deprecation cost	€ 9.203	€ 5.014	€ 4.728
Public activity costs	€ 45.371	€ 55.385	€ 37.299
Foundation costs	€ 78.120	€ 122.828	€ 165.625
Profit Taxes (Paid or return)	-€ 2.053	€ 6.424	€ 32.732
TOTAL RESULT	-€ 107.321	-€ 151.141	€ 62.273
Liquidity	€ 1.007.045	€ 1.197.975	€ 1.462.531
Foundation Capital (CIEP)			
CIEP reserves	€ 955.330	€ 963.844	€ 934.816
Destination Public Reserves	€ -	€ 98.807	€ 278.976

ANNEX 1

ABOUT CIEP

Introduction

In September 2001, the Netherlands Institute for International Relations, 'Clingendael', launched the *Clingendael International Energy Programme* (CIEP). Supported by twelve institutions from the public and private sectors, CIEP participates in and seeks to make significant and substantive contributions to the public debates on national and international developments in the energy sector. After the initial period 2001-2004, CIEP continued largely on the same footing as the previous years based on the plan and estimated budget as described in the document *CIEP 2005-2008, Towards a European Forum* and agreed upon by the Board of Stichting Fonds Clingendael and seventeen participating institutions.

The main reasons for initiating CIEP were:

1. The need for a forum to discuss developments in the European energy markets, e.g. the liberalisation of the European energy market, which will impact the organisation of the market, government energy policies and strategies of companies operating in the energy sector. These changes in the internal European market take place against the backdrop of an expanding European Union, increased dependency on imported fossil fuels and efforts to address environmental concerns;
2. The concerns raised in public debates about security of supply and a growing import dependency, not only for European Union member states but also for other major consumer regions. These concerns will influence the policy options and choices of both consumers and producers. The political and economic developments in, for instance, the United States, Russia, the Middle East, the Caspian Sea region, and Asia, are therefore important in assessing the developments in the European energy situation.

Mission

Through research, the publication of studies, information releases (particularly through the media and internet) and the organisation of courses and training programmes, CIEP makes a fundamental contribution to the public debate on international politics and economic developments in the energy sector (oil, gas and electricity).

Objectives

- To serve as an independent forum for governments, non-governmental organisations, the business community, politics, the academic world, the media and other stakeholders or interested parties.
- To gather and develop information and knowledge about international political and economic developments in the energy sector on the basis of research, supported by a documentation system.
- To propagate information and knowledge about international political and economic developments in the energy sector by means of seminars, conferences, lectures, courses, publications and information releases via the media.
- To initiate discussions about current events and future developments relevant to the energy sector, energy policy, legislation and the relationship between the government and the private sector.

Research and activities

CIEP's research and activities focus on energy markets (oil, gas and electricity) and policy-making in the European Union and geopolitics of international energy policy-making and markets.

ANNEX 2

POST-PARIS NEW BUSINESS IS USUAL

CIEP RESEARCH AGENDA FROM 2017 TO 2021

After a long period of convergence of international energy markets, where coal, oil, natural gas, hydro and nuclear contributed to the national energy mixes, new energy technologies are now transforming both national and international energy markets and energy policy-making. At the global level, the share of these new energy technologies is still small, but at some national and regional levels these shares are expanding rapidly. Changes are both fast and slow, depending on the level of analysis (world or national), the type of demand (heat, cooling, mobility) and the ability to (technically and economically) serve the various types of demand. As a result, the interaction between the various parts of the energy system, for instance in the energy value chains but also across various types of energy conversion technologies, is changing too. This offers challenges and opportunities in sustaining energy system stability.

The new technologies are currently mainly focussed on the electricity sector where, in some countries, they already have a large impact on the **organisation of the market**. The intermittency of some of the generating technologies and the lack of sufficiently economically viable storage technologies create markets where traditional and new energy technologies must co-exist, and where market forces and government policies compete. The change from commodity-oriented markets to more capital intensive ones, with government or consumer guaranteed payments, is one of the issues facing policy-makers and investors. The cost of capital, the availability of land and acceptance may become more prominent issues in the coming years.

In emerging economies, often with more state-oriented energy markets, renewables are also beginning to impact the organisation of the energy sector, particularly where subsidies on traditional fuels are being reduced and new technologies are being introduced. In many countries, the organisation of the market is becoming more hybrid, emphasising the renewed importance of government policies and regulation.

Moreover, the new energy technologies will not only impact the energy and/or power mix, but will also change the specialisation of certain fuels to serve **demand in other sectors**. It is for instance likely that oil products, which now have a near monopoly in the global demand for mobility, will be increasingly challenged by other energy technologies (such as biofuels, LNG, electricity) and the development of new appliances. In heating, electrical solutions will compete with natural gas and oil products. Depending on the energy mix choices of countries and the availability of new appliances, some countries may develop into an energy economy with a larger share for electricity (due to electrification), while others may remain focussed on (low carbon) liquids and gases. The latter group could be countries with a variety of energy technologies and infrastructures, where liquids and gasses are used more intensely across the industrial and residential sectors. Interestingly, the economic structure of countries and the energy technology solution spaces or optionality may show much **more variation across countries** than before. Such a development could also impact energy trade flows and the security of demand for producing countries of natural gas, crude oil and coal.

It is clear that the changing demand for energy in the coming years will impact the **energy value chains**. On a global scale, demand is expected to grow substantially, despite energy efficiency gains. Growth of energy demand, however, will be unevenly distributed over economies, but also across sectors. In the OECD countries, energy demand is expected to be relatively flat, implying that new energy technologies come at the expense of traditional fuels, while in emerging markets, both new and traditional energy technologies can grow. In the refining business we already see the influence of changing end-consumer markets and investments by IOCs and NOCs along the value chain, challenging the market model of various market refineries.

Technology is playing an increasingly important role in the development and composition of the energy mix. The idea that ‘the era of cheap oil/energy is over’ was proven wrong by the emergence of light tight oil in North America. Moreover, the idea that cheap energy is over is also vindicated by the **rapid decline in production costs** of solar and increasingly also of wind energy. In oil and natural gas, innovation unlocked previously stranded oil and gas assets at a cost below the price of many deep offshore projects and other more conventional resources, which had until 2008 held the promise of being the ‘next game in town’. But also the development of the solar value chain may hold some surprises. The development of production methods, tailor-made production runs, the efficiency of the panels and the **focus on promoting domestic production** by many governments may change the concentration of production in China to a more distributed model of production. At the same time, the gas value chain is rapidly globalising, with more LNG coming on stream, connecting the previous regionally organised gas markets. The challenge for gas is to develop new markets both in power generation and mobility, while competing with various other energy technologies in heating markets. The price of gas and the cost of gas production capacities is crucial here, particularly when markets are re-designed to favour other technologies. Currently the qualities of gas, such as flexibility, energy per carbon emitted, and other pollutants, are not properly valued in commodity markets nor in government policies, and due to the geopolitical nature of some gas trade, may never be properly valued at a global level. Nevertheless, natural gas could become the flex fuel of the electricity sector in many economies, as a companion of intermittent energy technologies, while being challenged by new heat technologies in the industrial and residential sectors. Nuclear has potential to grow in energy intensive emerging markets, but new investments are difficult in the current low price markets. The coal industry is looking at India as its last large potential market, but prospects to grow in the longer term are slim, unless CCS or other abating technologies become economically available. Understanding the drivers of government policies and international market developments are crucial elements in future investment and trade opportunities and international energy relations.

The development of the various energy value chains has always been strongly linked to demography and economic growth. The prospect of a period of **lower global economic growth**, but also (increased) decoupling of energy demand growth from economic growth is another large uncertainty for investors in energy. New industrial production methods and organisation of production could impact substantially on the demand for energy. Moreover, in a low economic growth environment, energy demand and supply will also grow less buoyant, particularly when government policies are at the same time biased towards an increased share for certain energy technologies and not others. In the post-Paris era, this may change the inter-fuel dynamics, boosting growth of new energy technologies to the detriment of more traditional (imported) fuels. Much depends on translating the

intended national climate change policies of Paris into execution of the plans. The cost of capital, the availability of (abatement) technology, access to energy resources and the ability of consumers to adopt new energy products and services will determine the pathways for certain fuels in certain economies.

The uncertainties related to the speed of transition, the cost of energy, the development of new energy technologies, the impact of government policy-making could be deepened by the growing **geopolitical conflicts** in, for instance, the Middle East and Europe, where energy investments, production and trade could easily become snarled into these conflicts. Security of demand for producers of coal, oil and natural gas could become a serious issue, and could lead to social-economic unrest when these economies have to adjust to new international energy markets before they have fully monetised their reserves. The speed with which economies are able to adopt to new energy technologies and at what socio-economic cost will be as important in determining the **future international energy relations** as the ability to access energy in freely traded international markets. For instance, tensions in Asia could hinder development of more integrated energy markets and re-orient policy-making on security of supply issues rather than market developments and climate change policies.

CIEP research will continue to focus on these developments across energy value chains and economies with the dynamics of new energy technologies impacting investments, demand, supply and policy-making always in mind. Both the international and the European developments in markets and policy-making will be key, depending on the topic. We will continue to research developments in international and European natural gas and oil markets, and intensify efforts to analyse the impact of new energy technologies on various international markets and government policies.