

# ANNUAL REPORT 2015



May 2016

Affiliated to the Netherlands Institute of International Relations 'Clingendael', CIEP is an independent forum for governments, non-governmental organisations, the private sector, media, politicians and all others interested in changes and developments in the energy sector.

CIEP organises lectures, seminars, conferences and roundtable discussions. In addition, CIEP staff members lecture in a variety of courses and training programmes. CIEP's research, training and activities focus on three themes:

- Regulation of energy markets (oil, gas, electricity) in the European Union;
- International economic and geopolitical aspects of oil and gas markets, particularly with respect to the European Union security of supply; and
- Energy and sustainable development.

CIEP is endorsed by the (Dutch) Ministry of Economic Affairs, (Dutch) Ministry of Foreign Affairs,

(Dutch) Ministry of Infrastructure and the Environment, BP Europe SE- BP Belgium/ BP Europe SE- BP Nederland, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ('Rabobank'), Delta N.V., ENGIE Energie Nederland N.V./ ENGIE E&P Nederland B.V., Eneco Holding N.V., EBN B.V., Essent N.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., Shell Nederland B.V., TAQA Energy B.V., 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](http://www.clingendaelenergy.com)

Title	: CIEP Annual Report 2015
Copyright	: 2016 CIEP
Published by	: Clingendael International Energy Programme
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## THE 2015 CONUNDRUM

The year 2015 was dominated by discussions on the oil price collapse, the lack of recovery and further slippage at the end of the year. At the beginning of the year 2015, most attention went into getting a better understanding of the mechanics of Light Tight Oil (LTO) production, which, after the announcement of OPEC not to tighten supply in November 2014, was deemed the next flexible supply source. A ream of articles were listing drill rig counts, showing substantial declines and the conclusion that LTO supply would soon follow. When supplies continued to increase, however, due to greater efficiencies, it became clear that 'traditional oil industry watching' would no longer suffice to explain market developments. The business model of LTO or shale oil in the US is completely different from the conventional model, with different financing, production profiles and hedging possibilities. Initially, LTO was seen as the marginal producer of the international oil market. Soon, it appeared that LTO supplies were much more resilient in the low price circumstances than previously assumed. Moreover, the variety of cost profiles among the shale plays also mattered and the existence of sweet spots allowed production to continue much beyond the initial expectation. The flex worker of the oil market had indeed been flexible, but not in the way expected.

As 2015 wore on, the analysis of oil market developments began to include a more sophisticated perspective on the robustness of LTO production and the LTO producing companies. Towards the end of the year, the assessment of LTO had nearly reversed completely, now overstating the ability to produce at any price. In the mean time, the weakness of oil prices severely impacted on other major oil industry players. Many OPEC countries experienced a serious downturn in oil income and saw fiscal deficits grow. Only when the production overhang becomes smaller will OPEC, or more specific, Saudi Arabia, be able to contemplate changing its production policy. As long as Saudi barrels not produced, could be replaced by stored or by elsewhere produced barrels, the economic logic does not add up. Moreover, the return on the oil market of Iran and increasing supplies from Iraq have complicated such market management. The fact that both Iran and Iraq are looking to grow their exports of oil only complicated OPEC negotiations. In the battle for market share, OPEC production increased substantially beyond its self-imposed ceiling of 30 million barrels a day (MBD).

Also International Oil Companies, IOC's, were greatly impacted. Investments in so called 'technical oil', such as deep offshore and tar sands, were no longer in the money. New investments were delayed or cancelled. Cost cutting became the name of the game. The lay-offs in the oil industry are substantial and are far from over. The weakness in demand did not help at all either. Many countries with subsidies on oil (and natural gas) began to use the decline in international market prices, at the urging of the IMF, to shrink or abandon subsidies, i.e. not passing on the price decline to end-consumers. In more mature oil markets, demand hardly responded, with the exception of the US. Weak economies in Europe and Asia did not help the market to balance.

Companies (and some countries) that thought that the natural gas market would offer some compensating solace were disappointed. In Asia, Liquified Natural Gas (LNG) is traded on oil-indexed contracts. Declining oil prices therefore also worked their way into international gas markets, reducing the spread between European (hub) and Asian gas prices. Only in the US, gas prices were lower, due to abundant shale gas supplies and relatively warm winters.



Again weak economies and a reduction of subsidies for end-consumers did not help demand for natural gas in Asia. In addition, Japan decided to re-open some of its nuclear facilities, while in Europe renewable power supply had already pushed natural gas power plants to the marginal end of the merit order. Cheap coal remained a stiff competitor in power generation in many economies, in part because natural gas was displacing coal power plants in the US and US coal producers look for markets outside the US. Also gas producing countries felt the pinch of price declines in 2015. Investments in new projects are also under pressure, particularly because the overhang in natural gas is expected to last longer than the one in oil. In both oil and natural gas, the slump in investments could result in a sharp increase in prices once markets recover, although in some markets, demand may not return to previous levels because of the competition from new energy technologies.

In 2015 renewables also caught the headlines with much lower kWh bid prices than before, showing the progress in bringing costs down. The solar power plant tender in the United Arab Emirates stirred everyone's imagination on the future competitiveness of the new technologies. Although the circumstances are not completely compatible with other bids around the world, the headlines were correct in flagging the rapid reduction in the cost of renewables.

With the markets working through the many overcapacities resulting from the commodity supercycle, the geopolitical uncertainties have had a surprisingly weak impact on pricing. Normally the tensions in Central Europe and the Middle East of the past few years would have increased the risk premium on oil (and natural gas). Now, plotting these events show that they coincide with price declines instead. The last few years have made security of supply stories sound rather hollow in the shorter term. Again the complexity of geo-economics and geopolitics, and their impact on supply and demand, has undermined the easy rhetoric of many headlines. Also in Europe.

Europe, for instance, is surrounded by oil and gas suppliers but has surprising uneasy relations with many of them because the EU cannot and will not provide them with a longer-term prospect of secure demand. Low economic growth and, despite immigration, low population growth, already stunt future demand expectations, while new energy technologies usurp the little growth there is at the moment. Here, we should wonder, are we witness to a case of Schumpeterian creative destruction, unfortunate-timed government policies or both? Regardless of the answer, the impact is felt both in and outside the EU. Reluctance to think through the impact of our EU national energy and climate change policies on the internal energy market is easily matched by a similar reluctance to seriously engage with these energy-supplying neighbours to manage the impact of this changing energy landscape. In the next few years, this mood board will not change. Nevertheless, a lack of security of demand could easily spur a significant mismatch in expectations between suppliers and consumers. Such a mismatch in timeframes and expectations could become one of those pressing 'energy transition issues' that might bite us in the tail. Not next year, but further on, when the current overhang in international oil and natural gas markets is worked away and a new conundrum is in the making.

Most of the developments mentioned above have been the subject of CIEP papers and events in 2015.

## BOARD OF THE FOUNDATION: STICHTING FONDS INSTITUUT CLINGENDAEL (SFIC) IN 2015

Drs. G.H.B. Verberg, chairman  
Drs. H.D.A. Haks, treasurer  
Mr. W.O. Russell, member  
Ir. R. Willems, member  
Mw. Mr. I. L. Van Veldhuizen, member  
Ir. J.M. van Roost, member  
Dr. R. Roborgh, 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. The year 2015 is the third year of the fourth project period (2013-2016).

### CIEP SUPPORTING INSTITUTIONS

In 2015, the following institutions supported CIEP:

BP Europe SE- BP Nederland  
Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ('Rabobank')  
Delta N.V.  
Dutch Ministry of Economic Affairs  
Dutch Ministry of Foreign Affairs  
Dutch Ministry of Infrastructure and the Environment  
EBN B.V.  
Eneco  
Essent 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.  
ING Commercial Banking  
Koninklijke Vopak N.V.  
Nederlandse Aardolie Maatschappij B.V.  
N.V. Nederlandse Gasunie  
N.V. NUON Energy  
Oranje-Nassau Energie B.V.  
Shell Nederland B.V.  
Taq Energy B.V.  
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. National energy policy is largely influenced by European and international developments. 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.

## STAFF

In 2015, the CIEP staff comprised the following people:

Coby van der Linde	director	(0.9 fte)
Pier Stapersma	senior researcher	(1.0 fte)
Sammy Six	researcher	(1.0 fte) until 1 May 2016
Luca Franza	researcher	(1.0 fte)
Daan Rutten	researcher	(1.0 fte)
Maurits Kreijkes	researcher	(1.0 fte) (from 1 July 2015 onwards)
Michiel Nivard	researcher	(1.0 fte) (from 1 July 2015 onwards)
Katarina Kertysova	researcher	(1.0 fte) (from 1/6 to 31/12/15)
Emma van der Veen	researcher	(1.0 fte) (until 1 May 2015)
Wendy Auf dem Brinke	assistant	(0.8 fte)
Marco Blankestijn	fin. administrator	(0.2 fte)

In addition to the research staff, CIEP had in 2015 four fellows, one senior associate fellow and three associate fellows:

Jacques de Jong	senior research fellow	(0.2 fte)
Dick de Jong	senior research fellow	(0.2 fte)
Luc Werring	senior research fellow	(project basis)
Christian Cleutinx	senior research fellow	(project basis)
Maria van der Hoeven	senior associate fellow	(0.2 fte)
Aad Correljé	associate fellow	(0.1-0.2 fte)
Pieter Boot	associate fellow	(project basis)
Martien Visser	associate fellow	(project basis)
Robbert van den Bergh	associate fellow	(project basis)

During 2015, the following students/interns were connected for at least part of the year to CIEP staff:

Maurits Kreijkes	student intern
Diederik Klip	student intern
Iulia Pisca	student intern
Sarah Otto	student intern

Other functions held by CIEP director:

Part-time Professor of Geopolitics and Energy Management,  
University of Groningen  
Member of the Wise Person group IGU (since 2004)  
Member of Regieteam Topsector Energie  
Member of the Supervisory Board of Wintershall Nederland B.V.  
(WINL) and Wintershall Noordzee bv (since fall 2015)  
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, and, weighing how the project would fit within the CIEP research agenda for that period, we agree to participate or not. 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.

## INTERNAL ORGANISATION

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

## CIEP PUBLICATIONS

The following overview highlights a selection of 2014 publications, most of which are available on the CIEP website ([www.clingendaelenergy.com/publications](http://www.clingendaelenergy.com/publications) or [www.clingendaelenergy.com/otherwork](http://www.clingendaelenergy.com/otherwork)). CIEP (associated) staff also published articles in newspapers, scientific journals and other publications listed under other work. In 2014 CIEP published 9 papers, of which four were tasked by the French Presidency under task force 3 for IGU and one a joint paper with Kapsarc and OIES.

## CIEP PAPERS

*Russia's Oil Export Strategy: Two Markets, Two Faces*, CIEP paper, January 2015, Sammy Six.

*Why Energy per Carbon Matters, The Relevance of Fossil Fuel Properties for Climate Change and Energy Transition Discussions and Policy-Making*, CIEP Paper, March 2015, Emma van der Veen.

*The New Dimensions of Geopolitics (and Natural Gas)*, for WGC 2015 IGU, June 2015, Ciep staff.

*International Law and the Use of Maritime Hydrocarbon Resources*, for WGC 2015 IGU, June 2015, Rene Lefeber.

*Is Natural Gas Green Enough for The Environmental and Energy Policies?* for WGC 2015 IGU, June 2015, Ciep and IFRI staff.

*Crude Oil Markets in 2015: The Battle for Market Share*, joint paper by CIEP/KAPSARC/OIES, July 2015

*The North Seas Offshore Grid, a pragmatic analysis of recent research*, Ciep paper, October 2015, Diederik Klip.

*Solar PV in a Strategic World, recent developments in the solar pv value chain*, CIEP Paper, November 2015, Pier Stapersma.

*From Southstream to Turkstream, Prospects for rerouting options and flows of Russian Gas to parts of Europe and Turkey*, CIEP Paper, November 2015, Luca Franza.

### *BRIEFING PAPERS*

Energy Union, Daan Rutten, July 2015.

EU ETS, Daan Rutten, July 2015.

### *OTHER PUBLICATIONS*

*Energiewende: Politica Energetica e Politica Industriale*, Daan Rutten, Energia, 3/2015.

*Contratti di Importazione del Gaz in Europa: Evoluzione dei Meccanismi di Pricing*, Luca Franza, Energia 2/2015

*Governing the Differences in the European Energy Union, EU, Regional and National Energy Policies*, Jacques de Jong (CIEP), Thomas Pellerin-Carlin (Jacques Delors Institute), Jean-Arnold Vinois (Jacques Delors Institute), Policy Paper 144, October 2015, Notre Europe, Jacques Delors Institute.

Energy Security: New forms of energy creates new dependencies, Coby van der Linde (CIEP) in: *The Colours of Energy*, Gert Jan Kramer and Bram Vermeer (eds.), 1 december 2015, available for free as ebook on: <http://www.shell.com/energy-and-innovation/the-energy-future/colours.html#vanity-aHR0cDovL3d3dy5zaGVsbC5jb20vY29sb3Vycw>; and available in iTunes bookstore for free.

Investeerders op de energieladder, Coby van der Linde (CIEP) in: *Het Profijt van Duurzaamheid, een zakelijke benadering*, Onno de Lange (ed.), december 2015, Wolters Kluwer, pp. 31-50.

### *COLUMNS*

The 2015 columns in *Energie Actueel* are written by: Coby van der Linde (<http://www.clingendaelenergy.com/columns>), Pieter Boot and Aad Correlje, columns by Martien Visser appeared at *Energieform* ([www.energieforum.nl](http://www.energieforum.nl)).



Picture belonging to CIEP/Nogepa Gasday invite

### *ACTIVITIES*

CIEP organised various events (meetings, training programmes, conferences, etc.) in 2015. See the list of events below, which is also available on <http://www.clingendaelenergy.com/events>; select 2015:

10 March 2015	ECN – CIEP ‘Refinery Emissions from a competitive perspective’ for VNPI
18 March 2015	CIEP/KAPSARC/OIES oil workshop
19 & 20 March 2015	KAPSARC Coal & Gas Workshops
25 March 2015	Debate on ‘Energy Transition - Is There a Carbon Bubble in Asset Valuations?’ in collaboration with Duisenberg School of Finance, Amsterdam
2 April 2015	Debate on ‘The Impact of Low Oil Prices on Investments in US Oil and Gas Projects and the Political Impact on the Middle East’ in collaboration with Ministry of Foreign Affairs
25 June 2015	Presentation by Richard de Caux will on the 2015 BP Statistical Review and the recent BP Outlook
3 September 2015	CIEP/Nogepa Gasday
11 November 2015	Presentation of the 2015 IEA World Energy Outlook
19 November 2015	Presentation by Spencer Dale, Chief Economist of BP, on recent international energy market developments and the possible impact on EU energy policy-making

*March 2015, Oil Workshop CIEP-KAPSARC-OIES*



## TRAINING

26 May 2015 - Oil and gas markets in flux (25 participants)

24 November 2015 - European Energy Union: more than the national parts? (21 participants)

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 (28-30 September 2015).

CIEP was involved several trainings modules on European Energy policy for the Florence School of Regulation (23 March, 21 May, 5 June, 22 June, 6 October and 5 November 2015) and the Energy Regulatory Regional Association in Budapest ( 7 July 2014).

CIEP also ran a course on Global gas business and European gas supply security at the Energy Master programme of SciecesPo in Paris from January-March 2015.

CIEP also contributed with an energy case to the training of Dutch junior diplomats of Institute Clingendael, numerous lectures in other diplomatic training courses of Institute Clingendael, and to training modules of the Energy Delta Institute in Groningen.

CIEP staff also gave various lectures on a wide range of energy topics at conferences and other meetings.

## MEETINGS

### **Board Stichting Fonds Instituut Clingendael**

9 June 2015

26 November 2015

### **Advisory board**

25 June 2015 & 15 December 2015

### **Contact group**

10 March 2015

16 June 2015

13 October 2015

8 December 2015

### **Gas group**

20 January 2015

3 March 2015

20 April 2015

15 October 2015

26 November 2015

### **Fuelmix group**

17 March 2015

15 April 2015

9 June 2015

15 September 2015



20 October 2015  
17 November 2015

### Oil group

16 February 2015  
1 June 2015  
30 September 2015  
14 December 2015

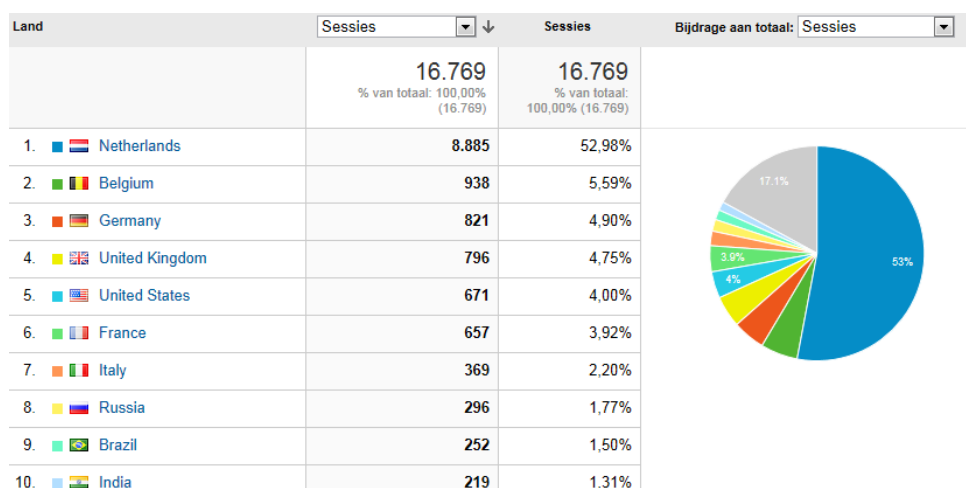
## LECTURES, SPEECHES, PRESENTATIONS, MEDIA

During 2015, CIEP staff members gave numerous lectures, speeches, and presentations or chaired sessions during training courses, conferences and seminars. Also CIEP staff in the course of 2015 gave various radio, television and written media interviews.

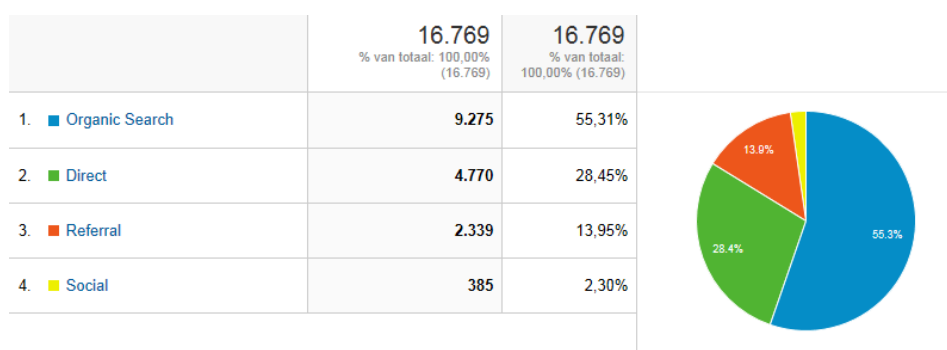
## WEBSITE

Everything CIEP published or organised from 2001 onwards, could be found at [www.clingendaelenergy.com](http://www.clingendaelenergy.com). Internet is an important communication and information dissemination tool for CIEP.

Where do our visitors come from in 2015:



How did they reach us in 2015:



## Unique page visits to our publications in 2015:

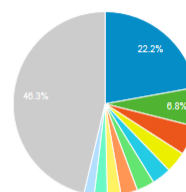
1.	/publications/publication/sunset-or-sunrise-electricity-business-in-northwest-europe	628	7,73%
2.	/publications/publication/security-of-supply-in-the-run-up-to-the-post-2020-period	583	7,18%
3.	/publications/publication/caspian-oil-gas-new-perspectives-beyond-projects-and-pipelines	552	6,80%
4.	/publications/publication/the-iraqi-oil-surge-in-a-new-energy-landscape	541	6,66%
5.	/publications/publication/natural-gas-in-the-netherlands—from-cooperation-to-competition-2003	511	6,29%
6.	/publications/publication/reflections-on-coordination-mechanisms	422	5,20%
7.	/publications/publication/a-regional-eu-energy-policy	420	5,17%
8.	/publications/publication/the-changed-geopolitics-of-energy-and-climate	388	4,78%
9.	/publications/publication/development-strategies-of-the-chinese-natural-gas-market	279	3,44%
10.	/publications/publication/european-power-utilities-under-pressure	260	3,20%
11.	/publications/publication/geopolitics-and-natural-gas	225	2,77%
12.	/publications/publication/the-energievende-and-germanys-industrial-policy	192	2,36%
13.	/publications/publication/gas-in-east-africa	191	2,35%
14.	/publications/publication/capacity-mechanisms-in-northwest-europe	179	2,20%
15.	/publications/publication/the-changing-market-for-energy-in-transport	158	1,95%
16.	/publications/publication/transition-what-transition	142	1,75%
17.	/publications/publication/natural-gas-in-the-netherlands—from-cooperation-to-competition	136	1,67%
18.	/publications/publication/in-nederland-weten-we-niets-van-schallegas	128	1,58%
19.	/publications/publication/a-cinderella-story-	119	1,47%
20.	/publications/publication/us-refining-dynamics	109	1,34%

## Unique page visits for events in 2015:

1.	/events/event/bp-statistical-review-of-world-energy-2014	505	21,34%
2.	/events/event/masterclass-energy-outlook-2035—christof-ruhl—	282	11,91%
3.	/events/event/ciep-gas-day	279	11,79%
4.	/events/event/energy-transitions-across-europe—the-future-challenge-for-utilities-and-governments	208	8,79%
5.	/events/event/ciep-energy-training	160	6,76%
6.	/events/event/energy-transition—a-european-challenge-by-peter-terium-ceo-rwe	128	5,41%
7.	/events/event/exxonmobil-energy-outlook-2040	118	4,99%
8.	/events/event/energy-lecture-by-he-ali-al-naimi	95	4,01%
9.	/events/event/iea-in-depth-review-nederlands-energiebeleid	88	3,72%
10.	/events/event/save-the-date-iea-weo-2014	71	3,00%
11.	/events/event/belgian-electricity-supply-in-an-eu-context	69	2,92%
12.	/events/event/masterclass-energy-outlook-2035—christof-ruhl	53	2,24%
13.	/events/event/ciep-energy-training-eu-energy-policy-dilemmas-towards-2030	47	1,99%
14.	/events/event/presentation-of-world-energy-outlook-2013	38	1,61%
15.	/events/event/iea-weo-2014	37	1,56%
16.	/events/event/ciep-gas-day-2013	32	1,35%
17.	/events/event/eu-energy-policy-kant-meets-machiavelli	23	0,97%
18.	/events/event/seminar-driving-forces-behind-oil-markets	15	0,63%
19.	/events/event/ciep-conference-schengenisation-of-energy-policy	12	0,51%
20.	/events/event/the-political-and-economic-impact-of-the-shale-revolution	9	0,38%

Unique page visits 'overall' in 2015:

		42.059 % van totaal: 100,00% (42.059)	42.059 % van totaal: 100,00% (42.059)
1.	/	9.317	22,15%
2.	/publications	2.846	6,77%
3.	/about_ciep	2.176	5,17%
4.	/about_ciep/staff	1.558	3,70%
5.	/about_ciep/staff/member/coby-van-der-linde	1.423	3,38%
6.	/about_ciep/vacancies	1.318	3,13%
7.	/events	1.236	2,94%
8.	/contact	1.008	2,40%
9.	/training	948	2,25%
10.	/about_ciep/staff/member/lucia-van-geuns	757	1,80%



## PROJECTS

In 2015, CIEP continued with the 'envoy' project with the Ministry of Economic Affairs.

In 2015 the project geopolitics and natural gas for Task Force 3 of IGU (international Gas Union) was finalised. In this project, CIEP, together with IFRI of France, conducted research and prepared papers and meetings for TF 3 of IGU for the WGC 2015 in June 2015 in Paris. CIEP was present at the WGC in Paris, France in June.

From May 2014 until March 2015, CIEP, together with researchers from the Duisenberg School of Finance, EDHEC of France and Tilburg University, was tasked by the Ministry of Infrastructure & Environment to research energy system transitions in the context of a question raised in parliament about a potential 'carbon bubble'. The research was finished on 1 September 2014. In December 2014 the report was part of a package of studies which were sent to parliament. In March 2015 an event was organised in Amsterdam to discuss the results.

In June 2015, CIEP was awarded a grant from Aramco Overseas Company to study and collaborate on a project on changing oil and oil product trade flows. Seminars on oil and oil trade involved collaboration with KAPSARC and OIES, while research was conducted independently in oil market issues.

## FINANCES

2015 was the third year of the fourth project period (2013- end 2016). Both income and costs were lower than in 2014. The overall financial result for 2015 was € 62,273.

	2013	2014	2015
Contribution stakeholders	€695.000	€715.000	€715.000
Project income	€132.773	€191.841	€101.202
Other income	€12.537	€ 3.769	€4.762
Staff costs	€676.944	€651.853	€544.277
Depreciation cost	€4.475	€4.723	€4.728
Activity costs	€40.755	€51.588	€37.299
Foundation costs	€156.444	€206.078	€165.625
Taxes		€32.732	€6.762
TOTAL RESULT	- € 38,308	- €36.364	€62.273







## 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 CIEP RESEARCH AGENDA 2014

In the research plan for the period 2013-2016, *Age of Paradox*, the leading theme is managing competing international and national energy interests in two main research areas: *European energy market developments and policy-making* and *Geopolitics of energy policy-making and energy markets*.

In these two themes, both fossil and renewable energies will feature prominently. We will focus on liquid, gaseous and solid fuels, along the entire value chain. The organisation structure of these markets, such as the level of vertical and horizontal integration, investments, trade flows and the intervention in markets by governments, is of particular interest to understand the business models of both International (Oil) Companies (IOCs) and National (Oil) Companies (NOCs) and (European) power and network companies. Moreover, the driving forces of energy policies of key producing and consuming countries are also important to complete the understanding of the complexities of International and European interest seeking. For that reason, the impact on international political and economic relations (and markets) of a more energy self-sufficient United States will be an important part of research in theme two.

In the period 2013-2016, the long-term energy policies, such as the European 2050 Energy Road Map, and the impact on the energy market model and security of supply will be central in the research efforts. In particular, research will focus on how to keep the market attractive for imported (fossil) fuels during the transition to a more renewable energy mix, and the impact this transition has on security of demand and supply (of oil, and natural gas, renewables) and energy diplomacy. The (relative) pricing of energy and externalities and the impact on the merit order in power generation (and investments) will be another important topic, while government instruments to change the energy mix (and fuel mix in the power sector) will feature high on the CIEP agenda. Based on research in the period 2008-2012, we also begin the endeavour to answer the question how transition to a low carbon economy in a mature or stagnating economy is fundamentally different from this same process under the assumption of growing markets (just like liberalisation in a mature energy market is different from liberalisation in a growing energy market). The insights we hope to gain from this more theoretical question will relate to the work of both themes.

The developments in the energy mix of crucial consumer and producer countries (such as US, China, India, Australia, Canada, Middle East and North Africa, Russia) will be an important element in understanding the geopolitics and geo-economics of energy (supply, trade flows, processing, market structure). The impact of the shale gas revolution and other frontier developments on energy policies is another significant factor to consider in the periods research. In both research themes, the international interests and the national interests will be contrasted.

2013 is the first year of this new research agenda.

Research in the first theme 'Europe' is focussed on changing business models of power companies in Europe. First an update of the portfolio of large power companies is on the agenda, followed by a study in how robust incumbent companies have prepared their portfolio's to include low carbon technologies with a view on the changing government incentives on the energy mix. At the same time, CIEP is involved in a study on regional policy cooperation in NW Europe with FSR (Florence),

REKK (Budapest), and CEPS (Brussels). In the Netherlands we collaborate with PBL. This project will be followed by a project on levels of policy-making (regional, at the member state level, EU level) and the proper level of instrumentation in preparation of a study on possible new market designs. These policy questions come forth from a perceived tendency for national energy policy to take (more) precedence over EU policy-making. The competency of the EU member states over the national energy mix in combination with the decarbonisation naturally places the lead in policy-making with national governments. The EU policies and the internal energy market create the framework within which these national policy choices are made. Based on legacy and national (political) preferences, the fuel choices (and shares) and incentives vary among the member states and threaten to re-erect national barriers in the internal energy market. The concentration of wind and solar energy in Germany is, despite the relative small share of these fuels in the total NW European market, already creating problems in transmission and distribution of power, and structurally changing the business models of nuclear, coal and gas-fired power plants. Such concentration of variable fuels was not foreseen in the scenarios, where the growth of fuels is averaged over the member states. Multiple speeds and the bottlenecks they can create have not been studied very thoroughly. The failure of the EU-ETS to produce robust CO<sub>2</sub> prices is also creating perversities in the European markets. Another important strand of research will be the role of gas in the power merit order. In 2012 a study on capacity markets was completed, and additional research on the impact of EU and national policy measures with regard to energy efficiency and renewables on the role of gas in the energy system is developed.

Projects on international energy market developments, the second major theme, focus on oil and natural gas, and some extent coal and renewables. In oil, a study is underway on the impact of tight oil on the US oil market, while a study on the changing structure of the international refining industry and oil trade flows has also been started. The US is projected to import less crude oil in the future and at the same time is importing less oil products. This is impacting both international crude and product markets, but could also affect the geopolitics of oil when the US will be importing less from unstable parts of the world, while both Europe, India and China will import more. The importing countries will seek greater security of supply, but it is not certain that they will do so by supporting multilateral governance of their energy relations.

At the time that crude flows are shifting, also the structure of the world oil refining sector is changing, which is the subject of another project. Refining capacity is expanding in the Middle East and Asia, while capacities in OECD countries are shrinking and oil products flows are changing course. In particular, the export of gasoline to the US from Europe is disappearing, while diesel remains a large import for Europe, changing the recent lucrative business models for the European refining sector. In the European domestic market, oil product markets are projected to decline, partly as a result of efficiency gains in transportation and lower economic growth and partly as a result of fuel switching (LNG, electricity). The European refining industry has thus weakened due to declining petrol exports to the US, and relatively high crude oil prices (compared to the US). The efforts to develop a bio-based economy will also impacting the petrochemical industry, further weakening demand for important parts of the refinery slate without many markets to export these particular products to. The market for transportation fuels in Europe is thus changing, partly as a result of mature market, LNG and bunker, electrical vehicles, changing the business models of European companies. New players, in particular NOC's, enter the European market through purchases of processing assets, hoping to secure demand in this market. Europe may not represent a market with

a growth prospective, in a portfolio of an expanding company, it represent a fairly stable market compared to the more risky growth markets in Asia. Moreover, Rotterdam (and Antwerp) also are attractive hubs for producers such as Russia, from where it can reach world markets more easily than from its own harbours and with less geopolitical risk. The importance of oil for world markets (also for pricing LNG in Asia) is evident from the continued substantial share of oil in the world energy mix, and the expected increased competition between Europe and Asia for oil in the next decades.

In world natural gas markets the impact of the shale gas revolution continues to impact European and Asian markets, while also the prospects of, for instance, Russia to monetise its natural gas reserves have changed. Greater demand for natural gas in Asia, in part because of the nuclear accident in Japan and the expected slow decline in the mix and in part because of growing demand in the coastal areas of China, has redirected a large part of the Middle East LNG to Asian markets rather than the Atlantic ones. A study on the development of US and Chinese natural gas markets are underway. Sluggish economic growth and the precarious position of natural gas in the European power merit order, has impacted demand for natural gas in Europe. Competition from cheap coal from the US (where coal is being backed out by cheap gas in the power sector) is further complicating European gas demand, while the prospect of importing relatively cheap US LNG is still uncertain. An update of an earlier study on world natural gas pricing systems has started.

As part of a follow up of the IGU project on Geopolitics and natural gas, a new project has started and a number of shorter publications on 'hot spots', such as the East and South China Sea, the East Mediterranean, is in preparation, while also developments in major producing and consuming countries will also feature in the studies.

Security of delivery (as part of security of supply) similarly needs researching. With more renewables in the energy mix it is unclear how security of delivery is guaranteed without sufficient back-up systems and without a crisis management system. The capacity mechanism study can be seen as the start of a chain of studies that will investigate the complexities of an interrelated energy system with more variable sources. One could argue that wind and solar energy improve security of supply but not security of delivery. It is possible that security of delivery will become more important in policymaking in Europe and that security of supply, still important policy drivers in China and India, will become less important. What will be the implication for policymaking and for Europe's role in IEF, IEA etc. It is possible that such a project could develop in the course of the year on the back of a project for ELI on security of supply. Much will depend on the progress of other studies and the research capacity



## ANNEX 3: AGE OF PARADOX: ENERGY MARKETS AND POLICY-MAKING

CIEP RESEARCH AND ACTIVITY PLAN FOR THE PERIOD 2013-2016

### **Research focus for the period 2013-2016**

In the previous four-year research plan, *Between a Rock and a Hard Place*, CIEP focussed on conflict and cooperation as the leading theme in the three research areas (in short, European energy markets, Security of supply, and renewable energy). In the research plan for the period 2013-2016, *Age of Paradox*, the leading theme is managing competing international and national energy interests in two main research areas: European energy market developments and policy-making and Geopolitics of energy policy-making and energy markets.

In these two themes both fossil and renewable energies will be studied, concentrating on liquid, gaseous and solid fuels, along the entire value chain. The organisation structure of these markets, such as the level of vertical and horizontal integration, investments, trade flows and the intervention in markets by governments, is of particular interest to understand the business models of both International (Oil) Companies (IOCs) and National (Oil) Companies (NOCs) and (European) power companies, while the driving forces of energy policies of key producing and consuming countries are also important to understand the complexity of International and European interest seeking. The impact on international political and economic relations (and markets) of a more energy self-sufficient United States will be an important part of research in theme two.

In the period 2013-2016, the long-term energy policies, such as the European 2050 Energy Road Map, and the impact on the energy market model and security of supply will be central in the research efforts. In particular, research will focus on how to keep the market attractive for imported (fossil) fuels during the transition to a more renewable energy mix, and the impact this transition has on security of demand (of oil, and natural gas) and energy diplomacy. The (relative) pricing of energy and externalities and the impact on the merit order in power generation (and investments) will be another important research area, while government instruments to change the energy mix (and fuel mix in the power sector) will feature high on the research agenda. The developments in the energy mix of crucial consumer and producer countries (such as US, China, India, Australia, Canada, Middle East and North Africa, Russia) will be an important element in understanding the geopolitics and geo-economics of energy. The impact of the shale gas revolution and other frontier developments on energy policies is another important factor to consider in the periods research. In both research themes, the international interests and the national interests will be contrasted.

All studies on oil, gas and renewable markets, and policy-making concerning the energy mix will be bundled in these two research themes. Our main interests are developments in the market for mobility and power generation, while industrial markets and value chain structures are also crucial.

The Gas group, Fuel mix group and Oil group are the main instruments in generating studies for the yearly agendas of the first theme. Theme two is mainly fed from research requests of governments and international institutions, although also the public research agenda cover this theme. Also here, the various brainstorm groups are expected to deliver topics for further research. Research under theme one is often done in smaller research groups, where staff from sponsors complements and/or supports CIEP staff. In theme two, CIEP staff often takes the lead and seek knowledge and discussion from sponsors, often through the brainstorm groups or contact group. Theme one research will have

a greater European (and sometimes Dutch) focus, while theme two will take the global energy scene as its point of departure. The successful formula of the brainstorm groups as the focus of internal discussion for the scope of studies will be unchanged. The composition of the groups gives CIEP a broad sounding board, while cooperation with other institutes prevents CIEP from becoming parochial in its approach. The change from three themes to two is merely a reflection of how integrated the security of supply/demand, environment and markets has become, both from a market and a government perspective.

#### *Explanation new set up of research agenda for the period 2013-2016*

In the previous two project periods (2004-2008; 2009-2012) we had subdivided the research into three main themes: the European energy markets; the geopolitics of energy supply and demand (security of supply and demand issues); and the low carbon energy mix. Increasingly, these three themes have become harder to separate from each other in the research projects. In markets for liquid fuels, biofuels have gained more market share in the market for transportation fuels, while in electricity generation, low carbon energy sources, such as hydro and nuclear, have been joined by biomass, wind, solar. In the heating and cooling sector, geothermal is gaining ground. Also in statistical data, renewable fuels are becoming more integrated, which makes it more natural to include all the fuels in the energy mix in our research agenda.

The introduction of these new fuels is policy driven and sometimes also (geo)politically or strategically driven. With the introduction of renewables into the national energy mixes, the role of the government in the energy sector is bound to expand in the coming period. Also, the current era of liberalisation in the OECD countries seems to have come to an end, at least in terms of its drive, also in the energy sector. As such, the emphasis of policy-making is now shifting to how liberalised energy markets can be regulated to allow for the introduction of renewable fuels. This is a main issue in Europe, in other economies, such as the US, the ample supply of natural gas has recently changed the energy landscape radically. Very often renewables are also seen or presented in the context of diversification of the energy mix and as such also part of the security of supply agenda. This very much depends on the domestic renewable potential of economies or regions. Imported renewables do not always create more security of supply, particularly not when the imports originate in one or two exporting countries and when the share of renewables in the energy mix becomes very large. Also renewable markets do not represent the same liquidity as for instance oil or to a lesser extent natural gas and coal, requiring different risk management tools for market participants. The intermittent nature of many of the renewable resources also implies that more complicated balancing services are required and that storage of electricity becomes a critical precondition. The inclusion of more renewables in the energy mix will pose new energy policy challenges that sometimes are underestimated. Availability of water, access to minerals and storage are examples. Connectivity also plays a major role. With European integration currently under stress, there should be concern about the internal market and the assumptions on which many market players have approached the European energy market in the past few years.

The incentives to manage the energy mix are different for various countries, depending on the main energy policy concern. In the US, the incentives to stimulate new fuels into the energy mix are mainly security driven and are focussed on reducing oil import dependency. The prospect of increasing oil imports, the concentration of conventional reserves in the Middle East, and the rising prices

stimulated the development of biofuels. Yet, also other issues influence the choice of governments to stimulate some fuels over others. In the US the agricultural sector faced declining government subsidies, in part because of WTO negotiations and in part because of fiscal concerns. The stimulation of corn-based biofuels can be seen as a way to reintroduce certain farm subsidies for hard-pressed American states. Also political arguments play a role. In general, there is a big difference in main policy drivers among states with and without sufficient fossil fuels resources, and those with renewable potential. The introduction of shale gas in the energy mix of the US has changed the strategic outlook of the country from being increasingly import-dependent to a country with substantial domestic resources, also in a carbon poorer mix. The main concern continues to be oil security, with a different geographical focus.

In China, the main focus is also on security of oil supply and the development of oil prices. Although China is rapidly becoming a main producer of windmills and solar panels, based on relatively cheap labour and the availability of rare earth inputs, the place of coal in the Chinese energy mix will remain very large indeed. Due to the geographical shift in economic (industrial) activity to the Asian economies, carbon and energy intensity of economic growth began to climb again after decades of declining. Given the growing import dependency of China, but also of India and other emerging markets, stimulation of domestic resources, fossil or renewable, will be deemed crucial to manage the balance of payments and the internal economy. The emerging economies have so far prioritised economic growth over sustainability, but this could change in the coming decades. In the coming years, China will still be poised on economic growth and will subsequently have to handle its increasing call on imported energy. Diversification to source and origin and energy efficiency will be the main policy instruments it can deploy, but the concentration of resources and limited access to foreign resources for investment will limit the effectiveness of the diversification policy.

With domestic oil and gas resources maturing or declining, the import dependency will increase. This also played a major role in discussions in the current project period. The dependence on Russian gas became a major (political) issue, not in the least because of the larger dependency of the new member states on one supplier and concentrated transit routes. Where west European countries were able to manage their dependency in gas with LNG supplies, and alternative routes, the east has fewer options. Shale could develop into an important tool of security of supply for this region, but west Europe is less favourably poised to develop this option. The natural gas discussion will continue to be important in the coming years, not in the least that natural gas provides emission advantages that coal with biomass cannot provide and with CCS on a commercial basis some years away. With a relatively declining carbon footprint (because of growing footprints of emerging markets) Europe must carve out a no regret energy strategy, which does not impair its economic competitiveness. A non-fossil strategy in an open world economy is more difficult when other competitors make other choices and the ability to finance such a strategy is constrained. The medium term problems could be too large to leap frog into the envisaged 2050 low carbon world without other main economies making similar commitments. At the same time, the governance costs of international energy may become much higher and geopolitically very different, forcing Europe to make hard choices. The European climate and energy discussion remain crucial for future energy market developments, just like international market developments in oil and gas will remain important drivers.