

**SPE**

Netherlands Section



Society of Petroleum Engineers | December 2018



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The SPE Netherlands bulletin is a publication by the SPE Netherlands section. The bulletin is published 4 to 5 times a year and comprises the main activities of the SPE Netherlands, the Young Professional community and the student chapters of Utrecht, Amsterdam and Delft.

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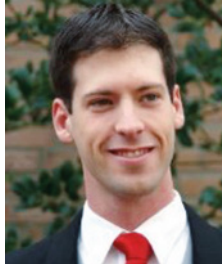
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## Outgoing Chairman | December 2018



Dear SPE member, dear reader,

The year is coming to an end as did my term as chairman in October this year. After chairing the board for two years I have now left the Dutch section in the capable hands of Femke Perlot-Hoogeveen.

Working on a board during the downturn, with only volunteers, has taught me a lot about what truly drives people. Together we managed to provide an active section with a properly filled agenda of technical sessions and networking events. We invited prominent industry leaders to join in panel discussions, recruited young engineers and students to our section, awarded scholarships to university students and did all this while maintaining healthy financial reserves in a time when sponsoring was hard to come by. I thank again our new chairperson, Femke, for her role as sponsorship chair the past years, in finding creative ways to keep sponsors interested and provide the funding required for us to serve our members. I wish her the best of luck in her new role as chairperson now that our industry is recovering, activity is picking up with oil prices healthy again.

The SPE Netherlands Section Board is actively following the developments of our energy transition and while we see the impact of earthquakes on Groningen gas and “renewable energy” on petroleum demand, I still believe there is an important role to play for the oil and gas industry, even in the Netherlands, for the coming decades. The energy we use per capita is so much more than what we cover with the solar panels on our roof, that there is still a large demand to be supplied by reliable, cheap resources. There really are two sides to every coin and The SPE Netherlands Section will play its part in providing a platform for debate on this issue.

I hope you enjoy this edition of our bulletin and please take the time to renew your membership prior to New Year’s Day because only then does the SPE Netherlands Section receive rebates on your membership.

Glück auf!

Quirinius van Dorp  
SPE NL Chairman 2017-2018



# Transition and transformation



Probably not a day goes by without you hearing or reading about transition. Be it the big energy transition or your organization being redesigned. At SPE, we talk about transition as well, in much the same way. We talk about the role of hydrocarbons in the changing energy landscape and what that means for our Society, both internationally and in The Netherlands. We talk about the scope of our membership, outreach to non-members and the topics that should feature in our lectures series.

There is transition visible in the board itself. I am honoured to have taken over from Quirinius van Dorp as Chairperson of SPE Netherlands. Having been on the Board with Quirinius for a number of years I have learned a lot from him and I want to commend him on all the work he has done, not only as Chairperson but also in his previous roles on the SPE Netherlands board. Quirinius is someone who knows SPE and the SPE ways extremely well and who has clear views on how SPE NL can live up to SPE's mission to support the E&P industry.

Taking over from Quirinius, I will do my best to continue SPE NL's work in accordance with SPE International's mission and vision while at the same time paying attention to making connections with the ecosystem around the E&P industry in The Netherlands.

A bit of personal introduction. I just started in a new role at Deloitte, working as Global Account Manager (internal) for Shell. Prior to that I worked as Conference Manager with Maritime & Offshore Media Group Navigo where I was responsible for the technical program of Offshore Energy at RAI Amsterdam (2009-2018). Before that I worked as Senior Policy Advisor on energy security with the Dutch ministry of Foreign Affairs (2006-2009) and as researcher and training coordinator with the Clingendael International Energy Programme, a think-tank (2003-2006). I am married and have three children, a son aged 7 and two daughters aged 5 and 2. There are many things I like to do beside work, family and SPE and I look forward to having time for them – one day!

Jokes aside, I look forward to putting my experience and my network to use for the benefits of SPE NL. I welcome any suggestions that you think can help the volunteers of SPE NL do a better job for you wherever you are in industry and in your career.

Quirinus would always end his texts with Glück Auf, which I really like. Would it be pretentious of me, a Political Scientist by training, to use a miners' expression? Or would you allow me? Let me know at [spe.nl.chair@gmail.com](mailto:spe.nl.chair@gmail.com).

Femke Perlot-Hoogeveen

## Programme

Date	team	title	speaker
Thursday 30 August 2018	YP-SPE	Pub Quiz	---
Monday 10 September 2018	SPE	Rock Physics Integration: from Petrophysics to Simulation	Reza Saberi (CGG)
Monday 24 September 2018	C.E.	introduction to Petrophysics	Jan Lutgert (EBN)
Thursday 20 September 2018	YP-SPE	TBA	---
Monday 8 October 2018	SPE/DL	CO <sup>2</sup> in the Subsurface - From EOR to Storage	Gary F. Teletzke
Monday 12 November 2018	SPE/DL	Managing Non-Technical Risks Made Practical and Value-driven	Christiaan Luca
Monday 10 December 2018	SPE/DL	4D Seismic History Matching	Paul Mitchell
Monday 14 January 2019	SPE	The Future of Oil and Gas industry: Overcoming Challenge	Mike Gunningham
Monday 11 February 2019	SPE	TBA	---
Monday 11 March 2019	SPE	Joint Presentation with SPWLA	---
Monday 8 April 2019	SPE/DL	EOR from Micro-Scale to Field Implementation - Example of Polymer Injection	Torsten Clemens
Monday 13 May 2019	SPE	TBA	---
Monday 10 June 2019	PGK/ SPE	---	---

## Board SPE 2018-2019

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At large	Kees van Hussen	Kees van Hussen
At large	Leon Beugelsdijk	Leon Beugelsdijk
SPE SC Amsterdam	Yanto Hogendorp	Gijs Langeveld
SPE SC Delft	Nasser Pragt	TBA
Faculty Advisor	Bill Rossen	Bill Rossen

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### A geologist

For the past ten years I served as a board member for the SPE, 5 years as part of the YP and 5 years on the senior board. It seems like a long time, but somehow, it just happened. I met and worked with some grand strange obnoxious and brilliant people who were enthusiastic about their simple mission; spread the word and spread the fun. And the only difference between the YP board and the senior board was the level of experience and so the detail of the topics. Enthusiasm and eagerness to learn has been key.

Some 15 years ago I was invited to join the YP meetings, and found them great fun. Beer and bitterballs were balanced with the social and work-related chats with others. But most important, after each session I had learned again a bit more on the puzzle that makes up the upstream and midstream E&P industry. Field developments, economics and perforation guns. Salt precipitation, soft skills and what to get out of cuttings with pdc bits. Every night was a success because the beer was cool, the chats were lively and I had learned about another piece of the puzzle. Thanks Alejandra and Andries and all the others for this time.

After a couple of months after my YP retirement (I was too old) the blood started to boil a bit and decided to become one of the reporters for Ruud, and provided input on the monthly meetings for his bulletin. And this resulted in me taking over his responsibilities for the bulletin as a whole, I became part of the senior board.

And that is how most people will remember me. The guy with the hat, handing out the badges, sending the emails. The geologist, pretending to be a geophysicist and doing his job at the SPE board. So I got to the higher level of understanding during the lectures on water monitoring, ship building, history matching, novelties and lessons learned from the past. No bitterballs this time, but accurate question rounds at the end. Retirees expressing their concern or their advice. Students asking prudent and honest questions. Politics, uncertainty, boldness and hope. And again, every time I learned a bit more.

The SPE Netherlands section is a weird bunch of specialists, whom are dealing with lessons from the past, the difficulties of the present and the uncertainty of the future. The big change (the gap in experience and age) has passed rather successfully. But the students are still facing a strong decline in jobs. Student chapters which are on the edge of participation, and operators who are not hiring young staff to level up the intellect. I greatly encourage the developments in CO<sub>2</sub> storage or geothermal, but don't forget which industry has to be thanked for the experience and research. We are still cruising ahead with light speed and now that the coming decades are requiring oil and gas. So let's get cracking and get to work.

Declining curves in Dutch recoverables, hydrocarbon security, governmental support and Dutch SPE members. I will be hanging on, no problem, the puzzle only gets more complicated with every piece. And I enjoy every minute of it! Rahul, Femke and the lot...Good luck. Thank you very much, and I'll see ya around. ■





# Rock Physics Integration: From Petrophysics to Simulation

Reza Saberi (CGG)

With 2018's restart of the SPE NL's monthly meetings came an interesting and thought provoking and high pace lecture given by Reza Saberi on the integration of rock physics modelling into other petroleum disciplines. Before the lecture Quirinius kicked off the 2018-19 program year with an introduction to new members and announced a few changes to the board of our section ! Following these announcements the stellar contributions of some of our members were recognised with SPE International Awards.

As a Masters student at the TU Delft I am often using well logs, seismic data and reservoir simulations to aid my understanding of the subsurface. However, I often think of them as relatively separate entities. Reza revealed that through using rock physics models the links between these disciplines can be tightened. I believe the most comprehensive example of this was the use of rock physics modelling to remove the effect mud invasion has on well log responses. The advantage of this is that it allows better well to seismic correlation. Another potentially more surprising link came in the form of utilising seismic velocity anisotropy in combination with rock physics models to develop an idea of subsurface stress orientation.

This, if proved reliable could be an invaluable tool for well planning. Similar important uses for the rock physics model were shown for the updating and improving of geological models and thus reservoir simulation models. All said I learned that rock physics has a key and fundamental place in amongst the disciplines of the petroleum sciences and should not be discounted when moving from one discipline to another.

Following the lecture, I had a very nice meal and discussed the future of energy in the Netherlands and the recent productivity and future prospects of offshore drilling off the coast of the Netherlands, amongst other topics. The time spent in good company and learning something new means I am thoroughly looking forward to the coming year with the SPE.

Duncan Perkins, Convener – SPE Student Chapter Delft ■

## SPE Recap | October Lecture

# CO<sub>2</sub> in the Subsurface from EOR to Storage

Gary Teletzke, Distinguished Lecture (Exxon Mobil)

It was a great opportunity to attend this very interesting lecture at the SPE Netherlands Section Monthly meeting on 8th October 2018. The lecture covered a wide range of issues pertaining to Carbon Dioxide Capture and Storage (CCS), and highlighted the practical challenges faced in the deployment of CCS. Gary also demonstrated the criticality of understanding the subsurface and thus the role of Reservoir Engineers in the deployment of CCS.

A recent report on “Global Warming of 1.5 °C” by the Intergovernmental Panel on Climate Change (IPCC) highlighting the need for drastic action to meet global climate change goals and prevent major disruptions to people and the ecosystem. In light of the report, CCS can play a significant role in helping to bring down the levels of Carbon Dioxide in the atmosphere. As highlighted during the lecture by Gary, CCS faces several key challenges, primarily the economic viability, scalability, sourcing of CO<sub>2</sub> for CCS, as well as areal distribution of CCS storage capacities, among others. The lecture covered several of these challenges in detail, and an infographic from the lecture was particularly eye-opening, emphasizing the large mismatch between India’s projected emissions and estimates of CCS capacity. Another interesting barrier we were unaware of until the lecture, was the requirement of stringent monitoring post Carbon Dioxide injection to check for migration as well as to monitor effects on subsidence and stress changes in the subsurface. The uncertainties involved in establishing the CCS Storage potential are huge, much higher than the uncertainty levels usually found in the Oil and Gas industry. This makes it harder to estimate the role CCS would play in combating Climate Change.

Gary’s lecture explored the capability of Enhanced Oil Recovery (EOR) using CO<sub>2</sub> injection as a CCS method. While the relatively large historical precedence, as compared to other CSS methods, provides for a much better understanding and easy deployment, the additional hydrocarbons recovered offset the costs of CCS which eventually makes it profitable for companies.

CCS is extremely relevant in today’s world and can play an important part in stabilizing atmospheric concentrations of CO<sub>2</sub> in near future. Gary is passionate about the subject, as was reflected both in the well researched lecture with insightful interpretations. This was the first SPE Lecture that we attended, and we are looking forward to other lectures in the future.

The SPE Netherlands section also awarded academic scholarships to 4 promising students, including the both of us at the monthly meeting. It is a privilege to be awarded the scholarship, and we are grateful to the board for picking us for the prestigious scholarship among all the applicants. We hope to utilize the grant to it’s full potential, in helping us pursue our education further and contributing more to the industry and to the world.

Joey Guerrero & Pranshu Singhal

MSc. Petroleum Engineering and Geosciences  
Delft University of Technology ■





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# Managing Non-Technical Risks Made Practical and Value Driven

Christiaan Luca, Distinguished Lecturer (Community Wisdom Partners)

On a pleasant November evening with the mild strains of the arrival of winter in the air we gathered once again in the Carlton Ambassador, The Hague for another SPE NL Monthly meeting lecture. This was the second of four planned distinguished lecture events organised for the 2018-2019 calendar year by SPE NL. In light of the recent national discourse over the impact and risks with producing mature gas fields this lecture delved into the very pertinent topic of managing non-technical risks.

Through multiple case studies the importance of non-technical risk management was brought to life. Particular amongst them the strategies employed to get the tricky Waddenzee project off the ground and Christiaan's own experiences advising large projects within Shell were an eye opener to a technically focussed engineer. The importance of communication, dialogue and transparency with all stakeholders are the cornerstone to managing risks. Organisational processes, clarity of tasks and embedded culture are a key enabler for the efficient adoption of risk management.

The thought provoking lecture elicited many equally provoking questions ! Soon enough the risks involved around the production and there by the recent policy decisions pertaining to Groningen was the topic of discussion and debate. An emotive topic led to many opinions and a robust question answer session which spilled over into the awaiting dinner and wine !

With the upcoming Christmas holidays an exciting programme for 2019 with many great lectures, Black Tie Dinner, YP and student events awaits all our members ! We hope to see many more of you in the new year !

Until then enjoy the holiday season and don't forget to turn risks into opportunities !

Rahul-Mark Fonseca ■





# On the 20<sup>th</sup> of September around 20 SPE YP members joined a 'sloep' cruise on the canals of Amsterdam!

The second YP event of the season gave an excellent opportunity to welcome multiple new SPE members, including several VU students. The marvelous weather, cold Corona's and tasteful bites set the perfect stage for the integration between the familiar faces and young students who seemed to be keen to chase the increasing number of opportunities for graduates in our industry.

If it's up to the board, a tradition is born!

September = Boat, beer & bites to welcome new friends!

SPE YP Board ■



## SPE NL YP Board Update



In August, the SPE YP board kicked off the social year with a successful Pub Quiz. Although the number of YP's working in the O&G industry is decreasing, the yearly pub quiz remains a well-visited event.

This year we decided to have a bit different social program for the YP's (though keeping the all-time winners like the pubquiz). Our main goal this year is to (re)-connect the remaining YP's in the sector. It helps to hear stories from your peers about how they are dealing with a changing E&P environment in the Netherlands. And together we can tell the story about how our work fits in the currently ongoing Energy transition, i.e. together we are making a big contribution to the energy supply of the Netherlands. Therefore we felt the need for more social and fun activities. We started with a boat tour in Amsterdam: a relaxing and enjoyable way to meet new people.

Last year we also started with introducing a new variety in lecture topics (from hydrogen to starting up your own company) and we will continue this, this year. In November we will have our first lecture of the year on data analytics. For us a new subject, though a

hot topic in the industry at the moment. What advantages can be there when getting the right insights from your data? Also new this year is that we will cooperate with the PGK and DPS YP's by among others co-organizing a workshop in spring. We are looking forward to this!

If you have other stories to share, on the topics above or on different topics, please send an email to [spe.yp.nl@gmail.com](mailto:spe.yp.nl@gmail.com).

Last, but not least, we would like to stress that everybody is welcome. We would like to invite all people working on (new) energy sources and related activities in the subsurface to be part of the SPE YP's. The goal of the SPE is to spread knowledge. With various disciplines present we can share the E&P knowledge of working with the subsurface, and we can learn about new energy forms to broaden our view. Please encourage all YP's in your company to join one of our activities. If they are not a member yet, they are more than welcome to send an email and to join to see what it is. We hope to see you at one of our activities! ■



The winning team from Neptune Energy at the SPE NL YP Pub Quiz August 2018.



# SPE NL Black Tie Candlelight Dinner 2019

THE SPE NETHERLANDS SECTION

## Black Tie Candlelight Dinner & Dance

Thursday  
24.01.19

Grand Hotel  
Amrâth Kurhaus,  
The Hague

The Netherlands Section of the Society of Petroleum Engineers (SPE) is delighted to invite you to our annual Black Tie Candlelight Dinner & Dance Gala on Thursday 24 January 2019 at the Grand Hotel Amrâth Kurhaus in The Hague. We would be delighted if you can join this SPE event, either as a table host or individual guest.

Every year in January, the Netherlands Section of the Society of Petroleum Engineers (SPE), hosts the SPE Black Tie Candlelight Dinner & Dance. This Gala is our industry's leading social and networking event of the year drawing executive management, senior leaders and engineers from the Dutch offshore oil and gas industry including oil companies, operators, offshore services suppliers and solutions providers.

As in previous years we offer tables for 10 guests, which allow you to enjoy a splendid 4-course dinner among familiar faces, accompanied by an outstanding music programme. Live musicians will entertain you and your guests till after midnight! Following our long lasting tradition of introducing oil and gas students to our industry community, each table will host one student who will be placed at an additional 'golden' seat.

We are also very proud that the President Director Shell, Netherlands Marjan van Loon has accepted our invitation as keynote speaker. We are very much looking forward to hear her views on the changing landscape of the oil and gas industry.

The SPE Black Tie Candlelight Dinner & Dance Gala was sold out the last three years and we expect a full house again this year. So please, book your table or individual seat as soon as possible to avoid disappointment.

If you would like to book a table you can send an e-mail to [SPE-NL-BTD@pureeventmanagement.nl](mailto:SPE-NL-BTD@pureeventmanagement.nl) or contact:

• Theo Rijper	<a href="mailto:theo@tr-im.com">theo@tr-im.com</a>	+31 (0)6 15 03 24 48
• Ayla Reerink	<a href="mailto:aylareerink@gmail.com">aylareerink@gmail.com</a>	+31 (0)6 13 06 10 74
• Peter Hesselink	<a href="mailto:Peter.hesselink@bayards.com">Peter.hesselink@bayards.com</a>	+31 (0)6 53 18 61 73

The annual SPE Black Tie Candlelight Dinner & Dance Gala promises to be a wonderful evening. We are looking forward to welcoming you at the Kurhaus.

On behalf of SPE Netherlands Section,

The organizing committee,  
Theo Rijper, Ayla Reerink en Peter Hesselink

**Please R.S.V.P**  
before 15 December 2018 via  
[SPE-NL-BTD@pureeventmanagement.nl](mailto:SPE-NL-BTD@pureeventmanagement.nl)  
(Not required for those who have already pre-booked a table or seat)







## SPE Student Chapter Delft

### Vision for 2018-2019

Our goal this year is to increase interest in SPE SC Delft and in turn to increase the number of active student members. We hope to achieve this by hosting a wide range of events that keep members up to date with current research & technologies and to create great opportunities to network with students and like-minded professionals. We play an important role in complementing the university curriculum with activities that reflect the demands of the industry. We try to accomplish this through organising technical lunch lectures, company visits and interviews, networking events and extracurricular activities.



### Ladies Lunch

On the 18th of July the 1st edition of the Ladies Lunch took place at Shell. This event was intended for female students of the petroleum industry as a response to the industries growing demand for female talent. More and more women choose a technical career. The Dutch CEO of, Shell, Marjan van Loon, gave a short talk about her career path and her experience as a woman in the mainly male dominated petroleum branch. As a result, our female members were given the opportunity to visualise their opportunities and career path in the petroleum industry.

It was a remarkable afternoon with loads of questions, which were answered by the women of the industry themselves. We would like to thank everyone who made this wonderful event possible, the ladies lunch will definitely be maintained on the events agenda for the upcoming years.





## SPE Student Chapter Delft

### **SPE SC Delft, AAPG & TUDelft Mini-symposium: Fluvial reservoirs**

SPE SC Delft co-organised a mini symposium (17th October) with AAPG and TU Delft on the topic of 'recent advances in applied fluvial sedimentology'. A number of leading researchers in their field, including both academia and industry presented their current work in a series of lectures. The audience was made up of students, staff and external attendees from industry. SPE SC Delft hosted lunch to kick off the symposium and tea & coffees during breaks. The event was a great success with 30 plus attendees.



### **Beginning of the year BBQ**

As the new academic year has started, the new TU Delft Petroleum Engineering Master students and current student members of the SPE were invited for the "beginning of the year BBQ". This event was hosted at 't Paviljoen, which was an available place at the TU Delft where the BBQ and other equipment could be placed. The BBQ was a nice way too see the current SPE members again after the summer holidays and was a great opportunity to meet the new Petroleum Engineering Students. Over some yummy BBQ food and drinks students enjoyed the last warm summer evening. The BBQ offered a variety of food and beverages (including non-alcoholic, vegetarian and halal), so everybody could join the event. A big thanks to Duncan and Tim on the board who cook all the delicious food on the BBQ.





## SPE Student Chapter Delft

### End of Year Drinks

With the academic year coming to an end, students enjoyed drinks and snacks out in the sun after two weeks of exams at the 'end of academic year drinks' event. On 4th July, roughly 35 students enjoyed wrapping up another successful year at TUDelft and with the SPE Student Chapter Delft. We said goodbye to old board members leaving TU Delft and this event was the first hosted by the new board that join us in May.



### Upcoming events:

- Well Academy visit (December)
- Lunch lectures (November and February)
- Football tournament (weekly)
- SPE SC Delft Excursion (February)
- Black Tie Dinner (January)



## SPE SC Amsterdam overview



**Gijs Langeveld**  
President SPE Student Chapter  
Amsterdam

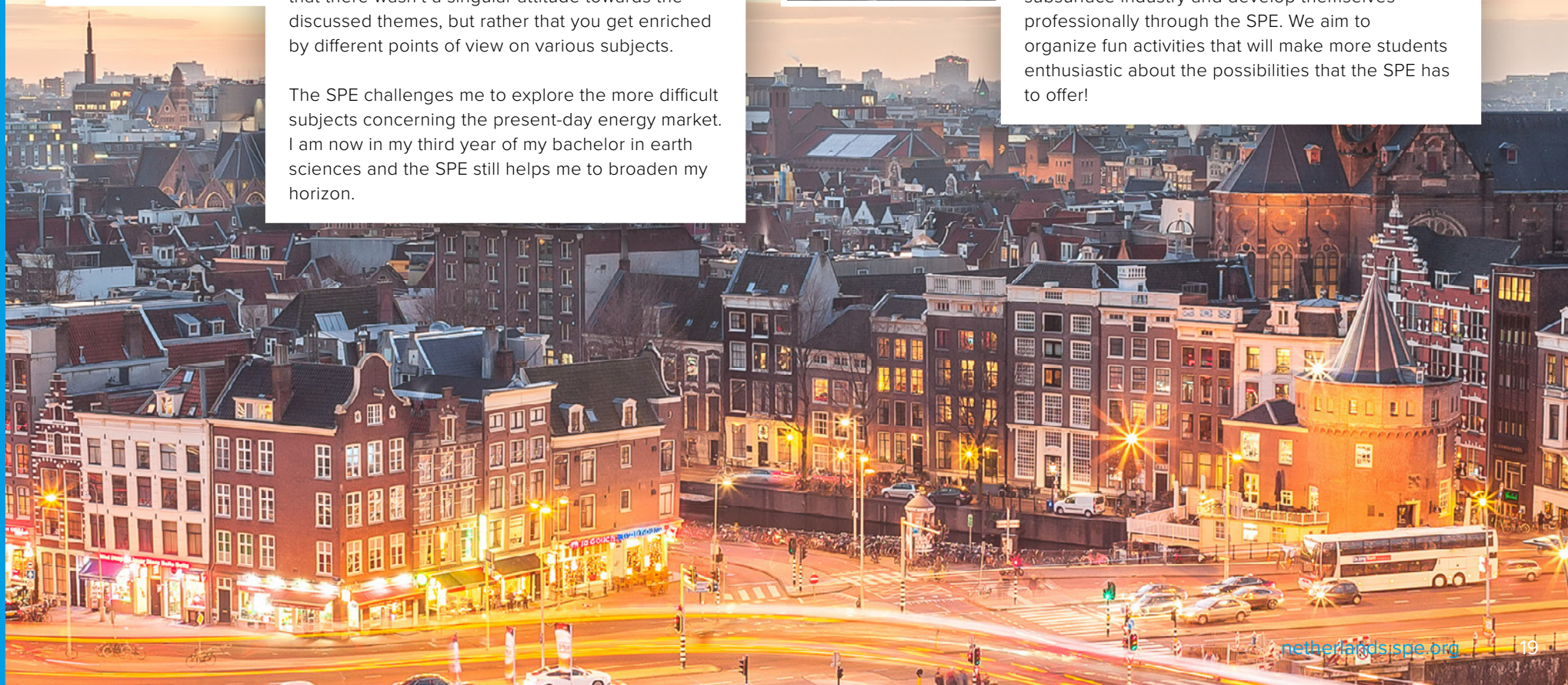
I came in contact with the SPE in the second year of my bachelor in earth sciences. Although my preference lays in the geological processes that take place on the surface, and I was planning to delve into the coastal management of the Netherlands, SPE did spark my interest. In my first meetings with the SPE I was delighted to see that there wasn't a singular attitude towards the discussed themes, but rather that you get enriched by different points of view on various subjects.

The SPE challenges me to explore the more difficult subjects concerning the present-day energy market. I am now in my third year of my bachelor in earth sciences and the SPE still helps me to broaden my horizon.



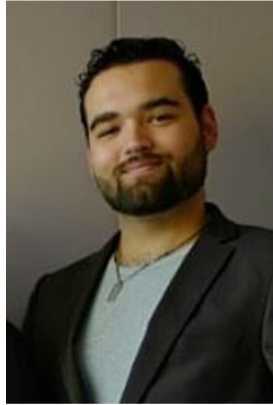
**Vincent Schriever**  
Vice-President SPE Student  
Chapter Amsterdam

I am personally thoroughly interested in the subsurface, and the Society of Petroleum Engineers has given me the opportunity to not only stay informed about the sector, but also meet many experts and professionals. As Vice-chairman of the VU Amsterdam Student Chapter I hope to help students broaden their perspective on the subsurface industry and develop themselves professionally through the SPE. We aim to organize fun activities that will make more students enthusiastic about the possibilities that the SPE has to offer!





## SPE SC Amsterdam overview



### **Rodney del Rosario** Secretary SPE Student Chapter Amsterdam

As the new secretary for the SPE Amsterdam student chapter I would like to introduce myself. My name is Rodney del Rosario and I am third year Bachelor student Earth Sciences with the specialization in geology and geochemistry. Though my interest in geology has started way earlier in my life, already at 4 years old I chopped my way through the limestone to find ammonites. And since then I have travelled the whole of the Netherlands with my granddad to look for everything from rare glacial erratics in the north to flint in the south. Nowadays I am truly fascinated with a wide range of geological subjects, I particular geochemistry, ores and seismology and I hope to find something which I can combine with my passion for photography.

### **Plans for the coming months:**

The first activity that we have planned is a lecture at the Vrije Universiteit Amsterdam (VU). This lecture can be attended by all interested students, so it's not necessary to be a member of the SPE. We have planned this lecture to give all interested students the opportunity to get introduced to the SPE and hopefully inspire them to join our Student Chapter.

Secondly we will of course attend the SPE Black-Tie dinner/gala. We have already started to promote this event in our Student Chapter and will continue to do this for the coming period, so hopefully we will attend this event with a numerous delegation from our Chapter.

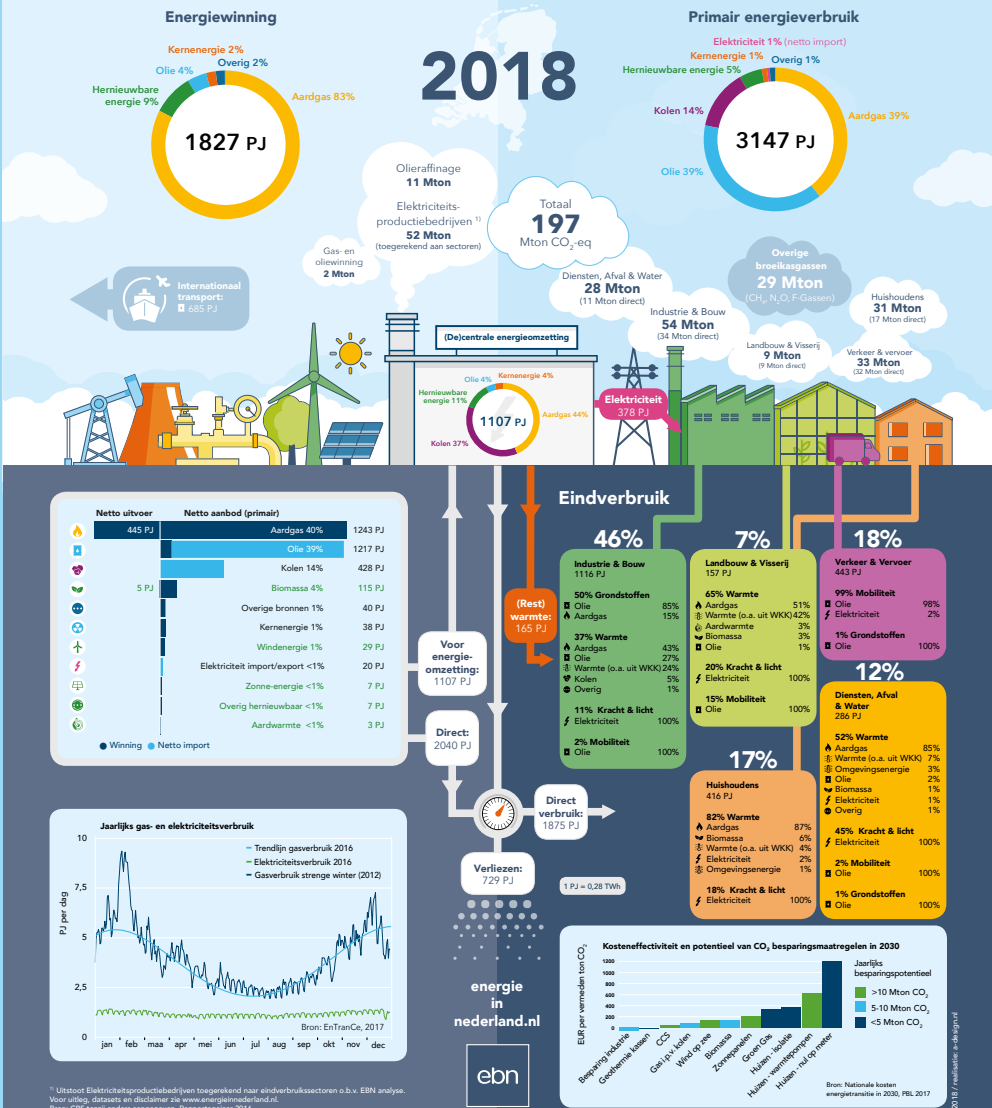
Lastly we have planned a movie night with a geological related movie or documentary, this event will also take place at the VU. We hope this event will attract the attention from the new generation of geologist. We want to introduce them this evening to the SPE and ensure this way that our Chapter will also get a greater influx of starting students.



# ENERGIE IN NEDERLAND

## AANBOD

Energie is een primaire levensbehoefte; iedereen in Nederland gebruikt het. Elke dag weer wordt het aanbod van energie aangesloten bij de vraag van de eindverbruikers. De verschillende energiebronnen worden aan de natuur onttrokken en -soms omgezet in elektriciteit of warmte- naar de eindverbruikers gebracht. Energie laat bijvoorbeeld het licht branden, zorgt voor warm water, zorgt ervoor dat fabrieken kunnen werken, drijft auto's en schepen aan, enz enz enz. De winning en het gebruik van fossiele brandstoffen leiden tot uitstoot van broeikasgassen. Deze infographic laat zien hoe het energiesysteem in elkaar zit, en tot welke uitstoot het leidt. De informatie geeft reden voor een goed gesprek, en dat is precies wat we willen. Laat het op u inwerken en ontdek de Energie in Nederland. [www.energieinederland.nl](http://www.energieinederland.nl)





## Introduction To Petrophysics

# Introduction To Petrophysics, Technology, Best Practices

Friday 21 September 2018, we invited Jan Lutgert to introduce 12 delegates into the world of Petrophysics. Jan has worked as a petrophysicist for TNO and EBN for more than 30 years, and shares his extensive knowledge lecturing at the University Utrecht, VU Amsterdam and the Anton de Kom University in Surinam.

The course attendants gathered at the KIVI NIRIA building in The Hague. A good mix of industry professionals from different disciplines, students and graduates joined the course.

The day started with an introduction of the group and an introduction to the world of petrophysics. Petrophysics is by definition the study of the physical and chemical properties of rocks and their contained fluids. Formation properties such as porosity, permeability, clay content and pore fluids and their inter-relationships are used to characterize the subsurface and to evaluate its potential for economic exploitation. These subsurface characteristics are used to distinguish between productive and non-productive formations, the fluid types they contain and their spatial distribution. With this information reservoir properties are determined and mapped to predict the producible content of reservoir and also to assess the quality of the reservoir seal(s).

The measurement techniques and calculations to establish this were covered. A great assortment of tools is available, for different types of measurements, from different vendors. Some of the basic tools were discussed in more detail. The aforementioned evaluation techniques are used in both the exploration and appraisal of oil and gas projects but also in geothermal, (gas) storage and groundwater applications.

Exercises were prepared by Jan, using handouts and excel sheets. Volumetric calculations, based on measured porosity, using gamma ray to differentiate between clay/shale and sand layers, net to gross, derived permeability were done with the formulas in the sheets. Using the Archie equations, calculating water saturation, an estimation on hydrocarbon volumes can be calculated.

Although a day is not enough to cover all the techniques and tools, however, Jan, with his experience, managed to give the group a good insight. Concluding the participants look back at a very successful event in which people new to the topic took a steep learning curve and where people somewhat familiar with the themes got a very well structured framing and refreshing of knowledge. ■



Politics is the practice to rule and influence people on a global, national or individual level. "Among other things" is a line to be added here, since a complete definition is difficult to quote in the restricted framework of this column. For instance, there also is involvement in the distribution of power and local resources. It should have as a purpose to have things running fine and to make inhabitants happy and prospered. Unfortunately, democratic principles are not sufficient. The caprices of the political high lords and bigwigs are not under control and political instability is the result.

I have always had the impression that ruling Chambers, Houses of Representatives, Congressen, Houses of Lords and Commons, and what have you do not understand the way the industry works. The majority of their members have never worked in industry. So much the worse they are elected for periods like four to six years and roll about in a security of continuation of their jobs. To the contrary, the principles of the industry are based on competition and success equally on achievements, while it has to respect rules and regulations which are imposed on it by ruling representatives of the people. Have you ever come across a company which was selected or elected to supply goods or services in a status of monopoly in a long period of time like four to six years?

Assets in the oil and gas industry normally have a long term character. Managers have to look forward years ahead and return of investments cover a high number of years. They have to be kind of prophets, while they cannot develop their strategies independently of governments.

Political instability is a disturbing factor and it can be killing. The one day everything looks prosperous and the other day there are disputes between rulers which induce measures and sanctions. The worst you can imagine is a cold war. Presidents are teasing one another at pleasure and at will. They try to frustrate their opponents by delaying or halting international projects. Swayed by passions and emotions they close frontiers, they seize bank balances and they impose sanctions on profitable developments against which managements are powerless. Some of them launch missiles.

Companies which are manoeuvring in between sovereign states and are willing to take political risks normally belong to the best ones. Taking on board frontier crossing projects and evaluating and facing the do as you please mentality of political leaders adorn their managements.

At present, with a cold war being on the look-out and numbers of menaces being raised, a number of companies are in jeopardy. The most brilliant entrepreneurs are at high risk. Politics show themselves unscrupulous with their self-glorifying power games which lead to throwing industrial values over the fence.

Kees van Hussen ■



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