

Reflection report for the Fossil Fuel Collaboration Committee

General information	
Name	[REDACTED] J
Name of manager	[REDACTED] J
Faculty + Institute	Faculty of Science, Leiden Institute of Advanced Computer Science (LIACS)
Email address	[REDACTED] J leidenuniv.nl
Project duration	6 years
Financial contribution of the company	[REDACTED] G (the contribution is conditioned upon Shell representative Co-PI; in this case, [REDACTED] J also an Assistant Professor at TU Delft, serving as the daily supervisor of the PhD student to be hired) [REDACTED] G (cofinancing by industry partners is obligatory in the NWO Perspectief grant. All industry partners contribute similar amounts or more, both in cash and in kind. Shells contribution is not intended for LU.)
Type of collaboration (f.i. bilateral, consortium, etc)	Consortium (NWO Perspectief grant) Foundation for Industry (FIND) Large AI models for a resilient high-tech industry P23.016

1 Company strategy

1.1 Is there a risk that the company will use the research for deception or ‘greenwashing’?

This is hard to say. Shell has been accused of [greenwashing](#) in the past. So, there is a risk that they will continue this strategy in the future, in the sense that Shell exaggerates their contribution to green energy projects and understates their involvement in the continuation of exploiting non-renewable energy sources. However, Shell is involved in green energy projects, and the project **results are explicitly meant to be used in this context.**

In the project proposal, the interest of Shell is formulated as “short-term and long-term forecasting of natural energy resources”. Specifically, in WP2, Shell is involved in the use-case for forecasting wind and solar energy. The project results are meant to make the energy transition part of Shells work as easy, efficient, and low-resource as possible. So, while we cannot influence Shells course directly, we can facilitate their work regarding the energy transition through this project.

To clarify, LU does not directly collaborate with Shell in this project. No data, financial, or other direct exchanges between LU and Shell are planned in the project. Shells involvement in the FIND project only pertains to the energy transition.

1.2 Has the company made a commitment on not engaging in new exploration or drilling for new oil and gas fields?

No, this is not a commitment that [Shell](#) has made.

1.3 Is the company going to reduce its methane emissions to near zero by 2030?

Yes, they are aiming for it according to their own [website](#) and [annual 2024 rapport](#) (page 76).

1.4 Does the company have a Climate Transition Action Plan (CTAP) containing:

a. a reduction in production volume by 2030 and 2040 and total phasing out of fossil fuels by 2050, in line with the Paris Agreement?

According to the [Shell website](#), their strategy is in line with the Paris Agreement. However, Leiden University's list of fossil fuel companies indicates the opposite. From <https://www.medewerkers.universiteitleiden.nl/binaries/content/assets/ul2staff/onderzoek/kwaliteit-en-integriteit/lijt-getoetste-bedrijven-fossiel-2024.pdf>

			Beoordeling t.a.v. 'disclosure'-criteria		Beoordelingscriteria t.a.v. 'alignment'-criteria						
			5. Decarbonisatiestrategie	6. Kapitaalallocatie	7. Betrokkenheid bij klimaatbeleid	Klimaat-accounting en auditing	Kapitaal allocatie				Betrokkenheid bij klimaatbeleid
Bedrijfsnaam:	Gevestigd in:	Paris aligned?	Totale beoordeling:	Totale beoordeling:	Totale beoordeling:		Indicator 1	Indicator 2	Indicator 3	Indicator 4	
Shell plc	Netherlands	Nee	G	G	G	G	28% CapEx (\$1,900 miljoen) is incompatibel met NZE (1.5°C) en APS (1.7°C)	70% incompatibel met APS (1.7°C)	> NZE (1.5°C), niet compatibele productie met 0-50%	Niet compatibel met APS (1.7°C)	C-

b. a reduction in operational emissions by 2030 and 2040, in line with the Paris Agreement?

Shell aims to be a net zero company in 2050 but as stated above, their strategy is not in line with the Paris Agreement according to Leiden University's web site.

c. % investment in sustainable solutions every five years?

This information is hard to find. Shell claims to have spent [23%](#) of their total capital spending in low-carbon solutions in 2023 and aims to spend \$10-15 billion between 2023 and the end of 2025 in low-carbon energy solutions, but [other sources](#) state that this is exaggerated. In the [annual report 2024](#) and the [Energy Transition Strategy 2024](#) we could not find a clear goal on what % they aim to invest in sustainable solutions every 5 years.

1.5 What is the company's score on the InfluenceMap Performance Band calculated by LobbyMap (if available)?

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2 Research project

2.1 Describe the research that is proposed in collaboration with the envisaged partner, max. 500 words.

ULEI does not directly collaborate with Shell in this consortium. In the broader context of this research project, however, Shell is one of eleven companies that are part of the User Committee.



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2.2 What are the envisaged scientific and societal impacts and desired results of the collaboration initiative?

Foundation for Industry (FIND) brings together 5 universities with 10 labs, 11 Dutch companies, ranging from start-ups to multinationals, and 2 knowledge institutes to pave the way for a new wave of AI-based automation that helps the Dutch industry strengthen and keep its international competitive advantage as a leading high-tech nation in the AI-era. FIND researches and develops novel foundation models, i.e., large artificial intelligence (AI) models, and brings their benefits to unexplored applications and data types that are specific to - and requested by - the Dutch industry.

[REDACTED]

[REDACTED]

2.3 Does the project demonstrably promote the energy transition and/or contribute to combatting climate change? If so, how?

Yes, Shell will use the FM toolbox for accurate short-term and long-term forecasting of natural energy resources such as wind and solar irradiance. This is of paramount importance in Shell's journey to becoming a net zero carbon footprint company.

[REDACTED]

2.4 Have agreements been made with the company about how the results will be used?

In the Consortium Agreement Annex 1, the field of use is defined as "The business field of use of a Project Stakeholder to be specified, in which the Project Stakeholder concerned can use the Option to apply for a licence on Results on a commercial basis.". For Shell, this field of use is defined as "Renewables, Mobility and Low-Carbon Fuels". So, Shell uses the project results in an energy transition context.

2.5 Why this company? Does the company provide expertise for the project that is not available anywhere else? Why is Leiden University needed for the intended research?

The project requires a broad selection of data modalities and industry partners, ranging from healthcare and semiconductors to automotive and smart cities. All 11 industry partners provide the relevant data modalities and AI tasks that the research of FIND focusses on for its innovation. The companies together are the stakeholders in the technology that will be developed.

Within the project, basically only one person from Shell will be involved,

[REDACTED]

His research expertise is needed for this project. Because of his connection to Shell, the consortium has access to relevant data modalities that are needed for the execution of the project.

From LU (LIACS), researchers from three different research groups with different expertise are involved:

Text Mining and Retrieval: Natural Language Processing, Information Retrieval

Systems and Security: High performance computing and advanced algorithms

Natural Computing: Evolutionary Computation, Explainable AI, Optimization

LIACS is one of the leading institutes in this field with expertise that is highly relevant to the project.

2.6 Who initiated the research? How was the research question and the project developed?

The project was initiated by from the TUE. The research questions and work package descriptions were written by the academic partners, inspired by real-world problems described by the industrial partners.

2.7 What are the potentially negative consequences of the envisaged research results for science and society, and how can they be prevented?

To create impact, it is important to scale the outcomes of FIND beyond the industry partners in the User Committee. The FIND program requires an 'interface' to a broader set of stakeholders in industry and society. For this purpose, the FIND Ethics and Societal Impact (ESI) board is established. The ESI board is designed to be highly complementary, bringing together a diverse range of expertise and perspectives. The board comprises professionals from various fields and they will support FIND with: 1) providing advice and guidance on ethical and legal barriers for AI deployment, 2) supporting outreach and dissemination activities to industry and societal stakeholders, and 3) organizing start-up activities for FIND researchers together with other knowledge dissemination activities.

Shell is not part of the Ethics & Societal Impact board.

The Ethics & Societal Impact board is responsible assuring that the technology and their application in the use-cases remain permissible within ethical and legal frameworks for AI.

Risks, from proposal p24:

Lack of attention to socio-technical aspects.	L	H
IP exploitation issues.	L	M
Scientific group deviates from plan; program deviates from plan.	L	M
Disagreement on balance between research vs. industry activities/solutions.	M	M

2.8 Does the collaboration agreement contain ‘anti-shelving’ provisions for the company in relation to (sustainable) research?

Not in the consortium agreement, but following the general, binding [NWO policy](#), all research results can and have to be published. Of course, we also follow the Ten Principles for Socially Responsible Licensing as laid down in the NFU report on ‘[Ten Principles for Socially Responsible Licensing](#)’, article 4.3.3 from the CA.

The project has to be open science and open source, following NWO policy. This means that we cannot exert control over how the FM toolbox is used after the project is finished.

2.9 Does the collaboration agreement contain provisions on dual-use? This is defined as knowledge, information, methods, products or technologies that are developed for legitimate purposes but can be misused for harmful purposes.

The CA does not contain provisions on dual use, because this is not meaningful from a legal standpoint. NWO and the Ministry of Economic Affairs and Climate Policy, who fund this project, have an open source and open science requirement. This means that after the project is finished, any company can access the FM toolbox and use it in any way they want. Consequently, there is always risk for dual use, whether a company is involved in the project or not.

From a legal perspective, this means that there is no rationale for including a dual use clause. In short, dual use cannot be prevented after the project has finished, due to the requirements of the funding agency.

2.10 Is there a risk that the project will generate revenue that could be invested in the exploration and/or extraction of fossil fuels?

No, the project itself does not generate revenue, at most it saves costs for the stakeholders (in Shells case, relating to the energy transition).




3 Funding of the project

3.1 How is the funding of the project organised?

Perspectief is an NWO programme funded by the Ministry of Economic Affairs and Climate Policy. The programme challenges researchers to work in close collaboration with industry and civil-society organisations on research projects dedicated to technological innovation that has societal impact and which create economic opportunities for the Netherlands. The focus of the projects is on addressing major challenges facing society and developing key technologies, thereby making a contribution to achieving the aims of the ministry's Mission-Driven Top Sectors and Innovation Policy.

The research projects must focus explicitly on the application of technical innovations in the context of the Knowledge and Innovation Agendas (KIAs) of the five societal challenges and focus on the Key Enabling Technologies and digitalisation

FIND focuses on AI as the key enabling technology, specifically on the development of models that can deal with large and sparse data in multiple modalities (images, text, sensor, audio, video).



The Perspectief grant requires cofunding from industry partners. The total project budget is , of which  euros from NWO and the rest as in cash and in kind contributions from industry partners. This way, 30.92% percent of the costs are covered by cofinancing. Of the total budget,  goes to Leiden University (2 PhD's, 2x bench fee and 2x travel costs). More details on the budget can be found in the proposal, on page 57 and 58.

NWO invoices in cash contributions from industry partners in accordance with the payment schedule (see: consortium agreement article 3). Payments will then be distributed to the grant recipients.

9.5 Declarations of co-funding

Company / Organization	In-cash co-funding	In-kind co-funding (monetized in-kind hours)
ASML		
ASMPT		
Brainport Development		
Canon		
KAICO		
KeyGene		
NKI		
NXP		
PercivAI		
Shell		
Signify		
Stryker		
Technolution		
TNO		

3.2 Who initiated the research project? How were the research question and research design established?

The project was initiated by  from the TUE. The research questions and work package descriptions were written by the academic partners, inspired by real-world problems described by the industrial partners. 



Toelichting grondslagen

In dit document kunt u secties vinden die onleesbaar zijn gemaakt. Deze informatie is achterwege gelaten op basis van de Wet open overheid (Woo). De letter die hierbij is vermeld correspondeert met de bijbehorende grondslag in onderstaand overzicht.

G Art. 5.1 lid 2 sub b

Het belang van de openbaarmaking van deze informatie weegt niet op tegen het belang van de economische of financiële belangen van de Staat, andere publiekrechtelijke lichamen of bestuursorganen

J Art. 5.1 lid 2 sub e

Het belang van de openbaarmaking van deze informatie weegt niet op tegen het belang van de eerbiediging van de persoonlijke levenssfeer van betrokkenen

K Art. 5.1 lid 2 sub f

Het belang van de openbaarmaking van deze informatie weegt niet op tegen het belang van de bescherming van andere dan in art. 5.1 lid 1 sub c genoemde concurrentiegevoelige bedrijfs- en fabricagegegevens