

SPE Gaia Sustainability Program

A Welcome and Introduction

Josh Etkind, SPE Gaia Chairperson
Johana Dunlop, SPE Gaia Chair Emeritus
2022





SUSTAINABILITY BASIS

Global
Wildlife
↓
68%

Land
Degraded
↓
75%

Wetlands
Lost
↓
85%

415 ppm
↑
GHGs
280 ppm

400 Gigatons
↓
GHG budget
40 gigatons/yr

This is the decade of action

Unleash the power of engineering to solve this problem!





“The world is in the early stages of a Sustainability Revolution that has the magnitude of the Industrial Revolution, but the speed of the Digital Revolution.”

-Al Gore

GHGs

**Sustainable
Development**

**Restoring
Biosphere
Vitality
+
Thriving
Within
Planetary
Boundaries**

We

need

Change
Makers

Movement
Builders





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

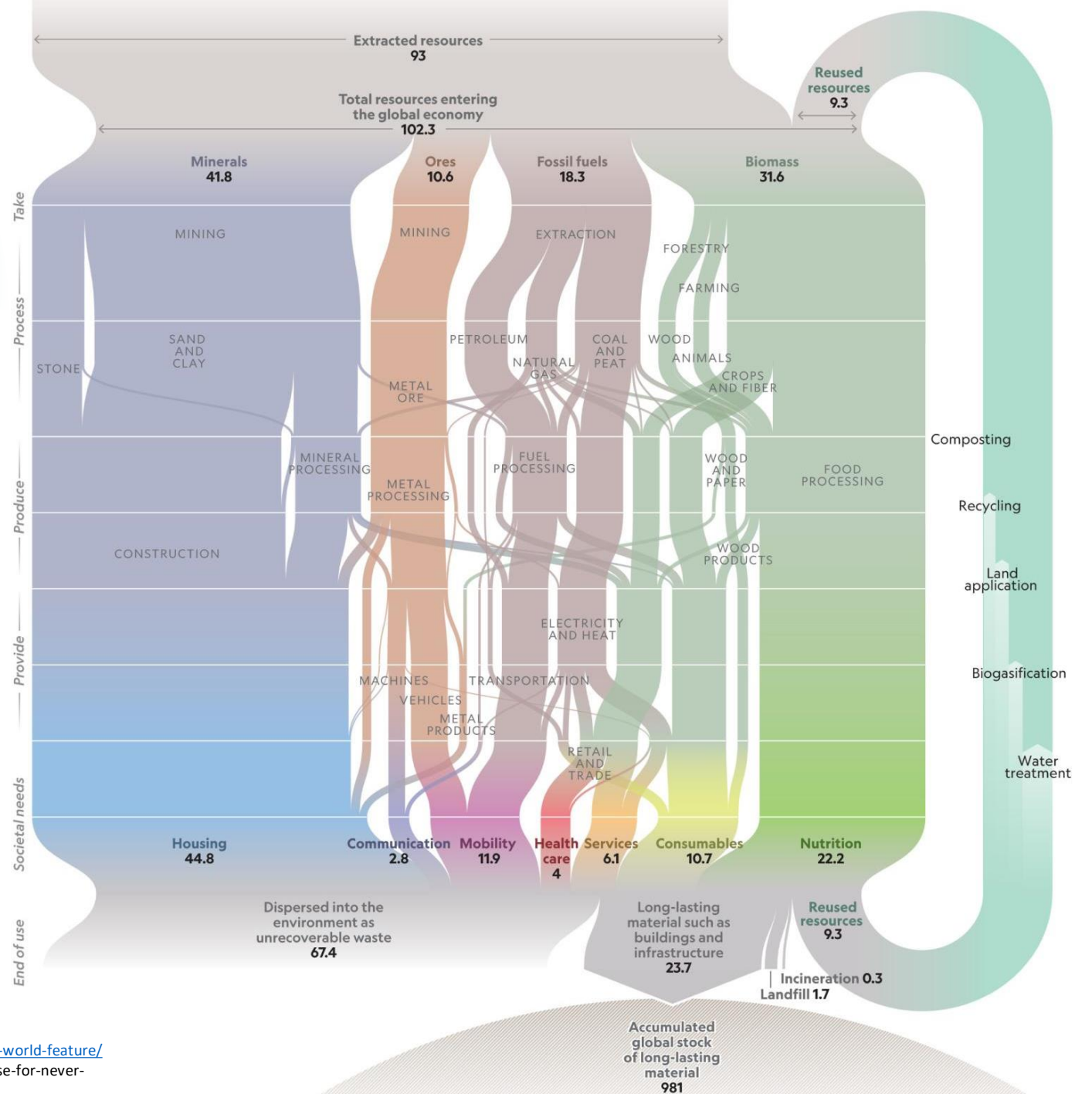
16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

Only 10%
of our extracted
resources are
reused

On pace to triple
material extraction
in 30 yrs and triple
waste prod. by 2100



SOURCE: graphic - <https://www.nationalgeographic.com/magazine/2020/03/how-a-circular-economy-could-save-the-world-feature/>
Waste stats: <https://amp-theguardian-com.cdn.ampproject.org/c/s/amp.theguardian.com/cities/2020/jan/13/the-case-for-never-demolishing-another-building>

What will it take to close the loop?



Think about everything you saw or touched today
Now imagine re-using it rather than discarding it
when it's current use is finished

The New 'Leadership Stack'

Disruptive innovators
inspired by nature,
Collaborators;
Molecules & Electron
energy pathways

Business Translators,
Agile developers, data
and code savvy,
Augmented by AI



Vision + Delivery,
Systems thinkers,
Curious, Creative,
Passionate Change
Agents

Customer-focused
Empathetic
communicators,
Stakeholder inclusion





INTRO TO GAIA

The History of Sustainability as an SPE Discipline

From Externally-Driven to a Business-Driven Source of Pride

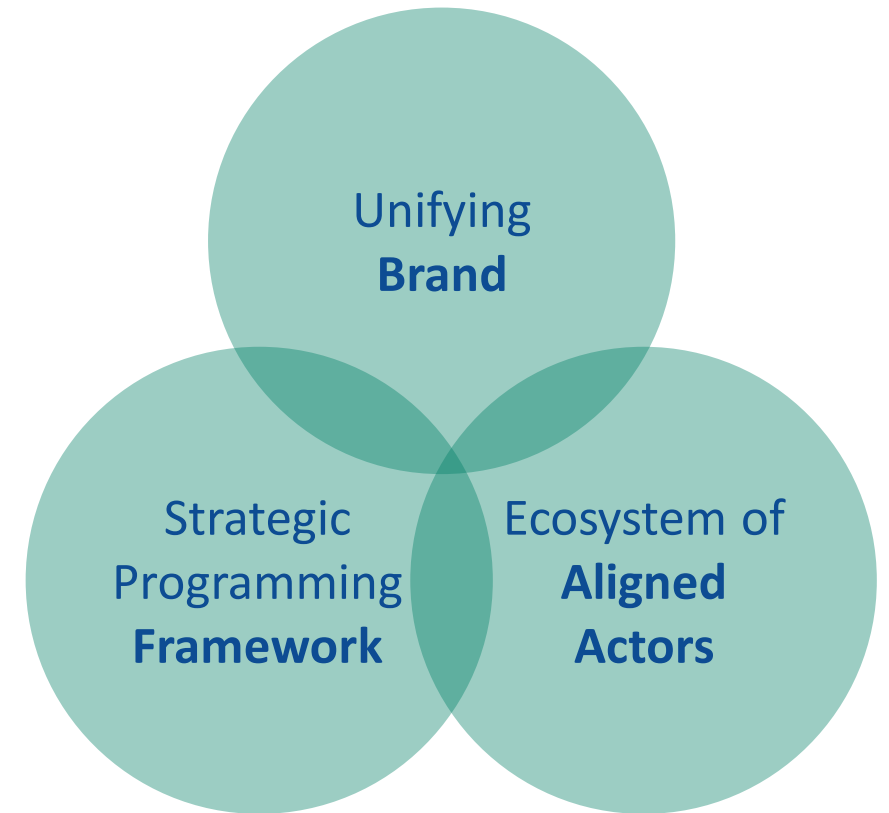


How does the SPE Gaia Sustainability Program Help Us?



Founded by the SPE HSES Technical Discipline, the Gaia program:

- Helps align us on a vision of humanity learning to **operate within planetary boundaries**
- Scales efforts that **rise to the scale of urgency** of the planet's sustainability challenges
- Builds on members' core and transferrable **skills**
- Provides a **safe space** for learning and engagement
- Demonstrates **O&G is critical and will lead** a just energy transition that also expands access to energy
- Embraces **new bodies of knowledge**
- Provides a means to **aggregate and align actions** to accelerate the construction of a resilient, sustainable future energy system



Why is Gaia Important for Me?

- **Connect you with a community** of dynamic technical professionals committed to the oil and gas industry *and* to thriving and operating within planetary boundaries.
- **Connect you to top quality events and content** to accelerate your learning and professional growth about new practices and business models
- Gain a sense whether our industry is “**doing enough, fast enough**”
- Join a **bottom-up movement to shatter the “sustainability glass floor”** to support operations & R&D in operationalizing the UN SDGs, the most comprehensive framework of sustainability performance areas
- **Prove through collective action and real progress that our industry can be trusted to lead in the energy transition**
- A safe space for **confident collective engagement** among diverse view holders hosted in SPE event venues



9 Element Strategic Programming Framework

Engaging and empowering engineers and scientists to generate scale and act with urgency & purpose

Principles

Quality & Ambition

Moving needles, not just ticking boxes



Aggregate



Collaborate



Engage

Pathways

SPE Strengths

Being additional



Innovation



Measuring what Matters



Listening & Communication

Priorities

Societal Needs

Bringing the outside in



Energy System Transformation



Natural Capital & Regeneration



Social Responsibilities



3-year goals: Gaia programming framework in action

2023: “Shatter the sustainability glass floor”

- **Raise recognition that the O&G industry has a central role to play leading the energy transition**
- See evidence of our strategic and additional impact on the industry
- Shatter the sustainability glass floor that separates top-down efforts from the core of the industry
- Ecosystem and repository of bottom-up innovations and practices manifested in SPE event programming, OnePetro papers, discipline White Papers, SPE Live events, etc.

2022: “Moving needles, not just ticking boxes”

- **Create a Safe Space to bring the outside in**, learn, extend our comfort zone, and grow
- Create flagship events that deploy SPE strengths in producing “**additional**” contributions to strong sustainability performance by the industry.
- Bring knowledge back into our companies, align ambitions, embed into innovation and operations
- Help industry professionals **upskill** to find their role in contributing to the energy system transformation

2021: “Empowering our members”

- **Build sustainability fluency and foster agency among members** – start bottom-up movement in service of sustainable development
- Disseminate top-down sustainability efforts of associations and companies
- Start to crack the “sustainability glass floor” [c] and accelerate operations uptake
- Help industry navigate toward future energy system – integrated, clean, inclusive with O&G as linchpin



2019/2020 – Initiation and Scaling

- ▶ Initiation at 2019 Gaia Summit in Fontainebleau, France
- ▶ Refined and tested framework in action
- ▶ Integrated Gaia in Sustainable Development Technical Section as flagship program
- ▶ SPE Gaia community on Linked In [>900 members]
- ▶ 30+ presentations int. & ext.
- ▶ 10 International Gaia Talks
- ▶ 14 Section Gaia Talks
- ▶ OGCI Methane e- Series – 5 SPE Live webinars
- ▶ Gaia-enabled 11 SPE energy transition events
- ▶ Climate/ET programming expert engagement series
- ▶ Petrobowl questions
- ▶ Supported BML re Sustainability Leadership training
- ▶ Shared & engaged with SEG and AAPG



2021 – Empowering our members



- ▶ Launched in all 7 Regions and implemented model to support scaling – key Sections launched
- ▶ Convened a great team – operational & directional – and growing
- ▶ Resources in Section Officers Resource Center
- ▶ Created *SPE TREE* brand & implementation guide to support Sections & Chapters
- ▶ SPE Live & Sections– Gaia Talks and workshop webinars with OGCI, IPIECA, IOGP, IOGCC: **Themes:**
 - ▷ Energy System Transformation [COP 26, CCUS, Methane, etc.]
 - ▷ Natural Capital
 - ▷ Just Transition
 - ▷ Measuring what Matters
 - ▷ Indigenous Wisdom
- ▶ YP Congress Measuring what Matters – Expert Engagement, JPT Article
- ▶ Methane Discussion Group – launched with PFC, Completions & DSEA
- ▶ Events: Hydrogen Workshop; Geothermal Workshop [Gaia-enabled]
- ▶ Gaia on Linked In: almost 1,000 members



2022 – Moving needles, not just ticking boxes

- ▶ Methane: Discussion Group → Technical Section; JPT Articles; Methane Guiding Principles Supporting Organisation?
- ▶ CCUS Gaia Talks led by IPIECA with OGCI and IOGP
- ▶ Other Gaia Talks: Natural Capital; Just Transition; Indigenous Wisdom; Methane
- ▶ ATCE 2022 – Gaia Special Sessions (*Trey to provide summary*)
- ▶ IPTC 2022 - Gaia Special Session led by YMEC on Carbon Circular Economy & Natural Capital
- ▶ Regional Events & Section Talks: Oman Gaia Summit (*Mohamed & Johana to provide summary*)
- ▶ SDTS & HFTS & BML: Collaboration around sustainability mindset
- ▶ SDTS & BML: Sustainability training
- ▶ Hydrogen Forum: Support/enable
- ▶ Asia RD Forum: Support/enable
- ▶ AAPG & SEG collaboration



2023 – Shatter the sustainability glass floor

- ▶ Shatter the sustainability glass floor that separates top-down efforts from the core of the industry
- ▶ Continue to provide useful resources and learning opportunities to support the frontline
- ▶ What else? Where should we begin scoping and planning now for 2023 ambitions?
 - ▷ COP28 in UAE: SPE Present?
 - ▷ Annual Gaia Summit, rotating across regions, or summits in several regions per year?
 - ▷ OTC-style Gaia Conference with sister societies?

What would you propose we focus on?

Where would you like to engage to support?



SPE TREE: Gaia Natural Capital Regeneration in Action!

A Nature-based solution

SPE TREE PROGRAM GUIDE

BIRD'S EYE VIEW

Technical Excellence

- Create conditions to learn, plan, engage and execute
- Aim for high confidence in climate benefits of your project
- Learn about ecosystem services
- Learn to measure what matters e.g. impacts and benefits



Stewardship For the Long Term

- Collaborate with local expertise
- Durable and sustainable outcomes are the goal
- Do not go it alone
- Actions speak louder than words

Value for the Members

- New learning opportunity
- Learning while doing
- One knowledge sharing community



Thinking Globally

(One SPE)

- One program
- One standard
- One community

Volunteerism

Committed, smart, intergenerational community creating conditions to learn about natural capital & make a difference.

- **TREE: Together Reforest for Energy and Ecology** - an initiative which aims for a very high standard in supporting or directly implementing nature-based solutions to offset emissions
- Designed to embody the SPE core values: technical excellence, knowledge sharing, member engagement, and collaboration.
- Builds on existing Section tree planting activities and provides a comprehensive technical guide to help define motivation, configuration and desired outcomes; **Steered by external biodiversity technical experts**
- TREE encourages the involvement of stakeholders and experts
- Raises awareness of **best practices** and aligned programs
- The emissions tracking start-up Footprint Inc. is a TREE partner to help Sections & Chapters determine their emissions offsetting rationale for their tree planting efforts



SPE Gaia Measuring What Matters

- ***“You can’t manage what you don’t measure”***
- Peter Drucker
- Consideration balanced across all 9 planetary boundaries
 - Biodiversity, natural capital (forests, water, ozone, oceans)
 - Pollution (particulates, chemicals, GHGs)
 - Natural cycles (nitrogen, phosphorus)
- Intentional primary focus on largest, near-term lever well within the Oil & Gas industry control
 - Can you guess what that is?

Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009

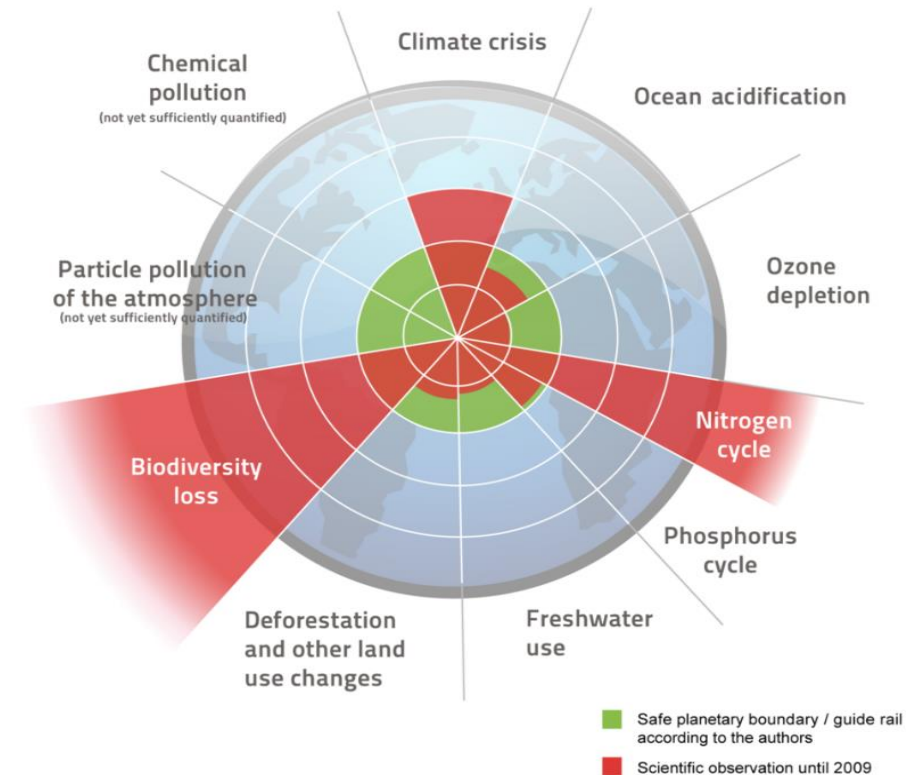
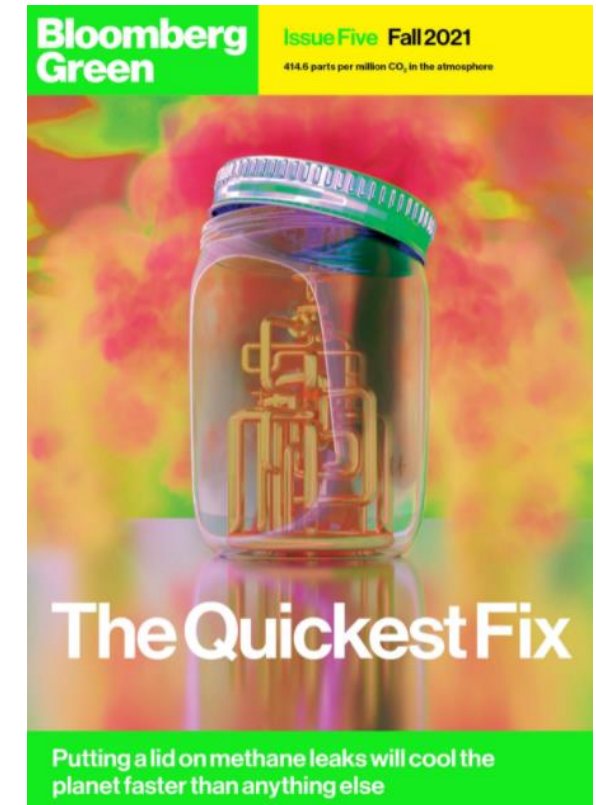


Illustration: Felix Müller (www.zukunft-selbermachen.de) Licence CC-BY-SA 4.0



Why focus on methane?

- Methane has contributed to around **30% of the global rise in temperatures** to date
- Curbing these emissions is the **most effective means** available for limiting global warming in the near term
- Pathways to reduction are both clear and **cost-effective**
- Fossil fuel operations generated close to 120 Mt of methane in 2020 – nearly **one-third of all methane emissions** from human activity
- **Possible to avoid more than 70% of current emissions with existing technology, 45% could be avoided at no net cost.**



Source: <https://www.iea.org/reports/curtailing-methane-emissions-from-fossil-fuel-operations/executive-summary>



The Oil & Gas Industry's Role

Start Cutting Here

Tools already exist to eliminate 58% of global methane emissions by 2030

■ Technically and economically feasible ■ Technically feasible ■ Residual

Livestock

30% technically feasible



Oil and Gas 85%



Landfills 80%



Coal mining 62%



Rice 60%



Wastewater 70%

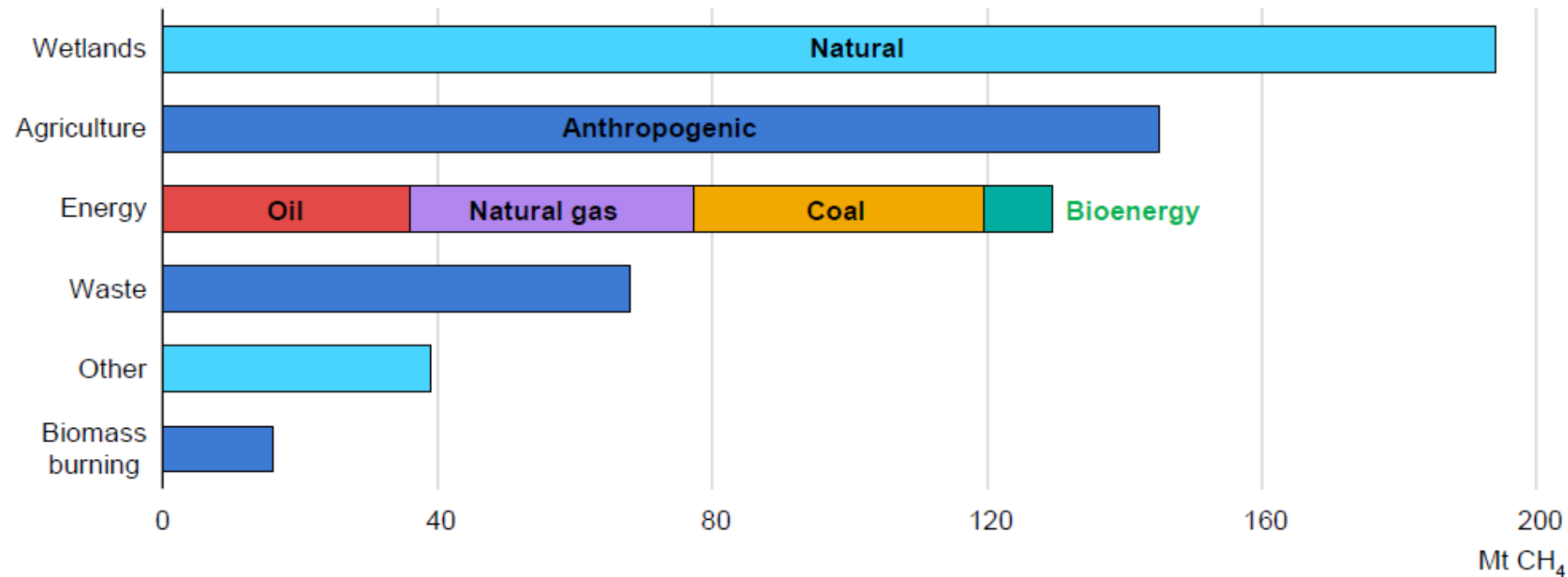


Source:
<https://www.bloomberg.com/graphics/2021-methane-impact-on-climate/?srnd=green>



45% reduction of anthropogenic methane emissions by 2030 avoids 0.3 degC warming by 2040s

Figure 1.1 Sources of methane emissions



IEA. All rights reserved.

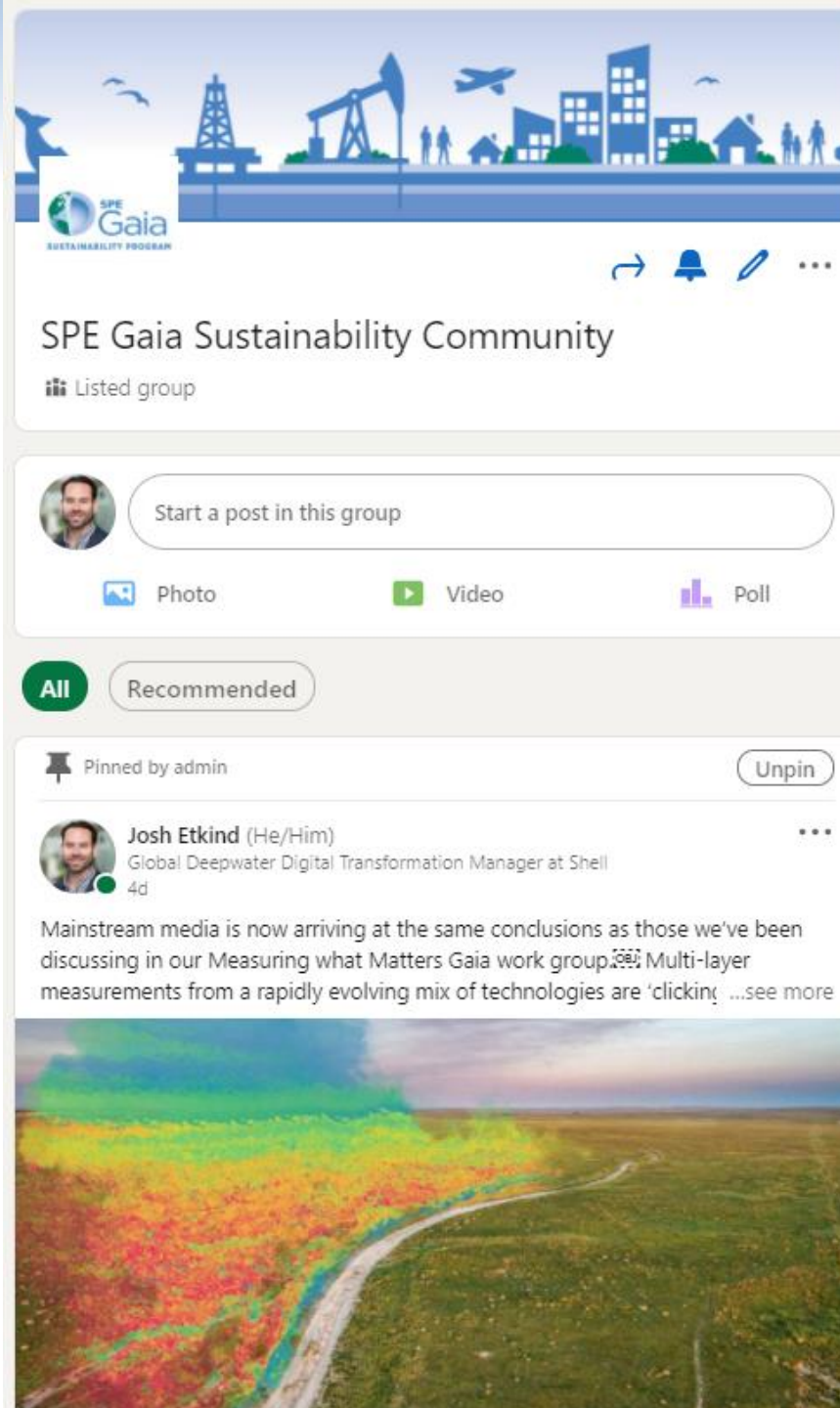


An inclusive, vibrant,
and rapidly growing
community – inside
and outside the SPE!

Join the Sustainable
Development Technical
Section

+

The Gaia LinkedIn
Community



913 members

Including Jeanne Perdue and 142 other connections



Invite connections




See all

About this group

The SPE Gaia LinkedIn Group has been created to accelerate sustainability performance by the oil and gas industry by enabling and empowering its individual members, present, former and future, SPE members, sister society members, and relat...

See all

Admins

-  **Jason Notoras-Espinosa**
· 1st Owner
Ardent, rarely loquacious, sometimes witty · Global team manager + Media visionary
-  **Josh Etkind** · You Owner
Global Deepwater Digital Transformation Manager at Shell
-  **Johana Dunlop** · 1st Owner
Membership Engagement Manager at IOGP | Ecosystem, Program & Brand Builder | Stakeholder Interpreter

SPE Sustainable Development Technical Section - Gaia Program - Steering & Advisory Committees

Steering: Officers – Pathway & Priority Leaders & Regional Liaisons

Advisory Committee: Advisors + Technical Section & Standing Committee liaisons

Steering meets monthly - Full Committee meets quarterly



Officers



Trey Shaffer
ATCE HSES 2022 Chair
HSES TD SPEI 2014-'17



Rebecca Schulz
SDTS & Gaia Chair
Elect



Josh Etkind
SDTS & Gaia Chair
2021-2022



Johana Dunlop
Gaia Chair 2019-'21
HSES TD SPEI 2017-'20



Anna Petrone
HSES TD, SPEI Board
2020-2023



Leon Beugelsdijk
Energy System Transformation



John Butler



Flora Moon
Natural Capital & Regeneration



Nihal Mounir



Zahraa Alkalby



Tony Zamora
Social Responsibilities



Alex Moody-Stuart
Measuring what Matters



David Shackleton



Phil Grossweiler
SDTS Chair Emeritus
DL & Gaia Ambassador



Linda Battalora
D&I Chair
Past SDTS Chair



Thraiye Seif Hemed



Lotanna Ohazuruike
TREE Initiative [NC&R]

Regional Leadership – Gaia Liaisons



Ian Sylvester
Asia



Ilyas Saribekov
Russia Caspian



Boitumelo 'Portia' Sehlake
Africa



Deb Ryan
North America
SPEI Board
Gaia RD Liaison



Pauziyah Hamid
Asia



Joschka Roth
Europe



Mohamed Al Balushi
MENA



Cesar Patino
LATAM y Caribe

Monthly

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Technical Section Liaisons



Paul J Evans
Water TS Chair



Steven Carpenter
CCUS Chair
Emeritus



David Shackleton
DSEA TS



Gaurav Agarwal
R&D TS Chair



Linda Battalora
D&I Chair



Helen Chang
BML Chair



Nihal Mounir
YMEC Liaison
Natural Capital Co-lead

Standing Committee Liaisons

Advisors



Nigel Jenvey
Gaffney Kline



Krishna Ravishankar
Occidental



Judy Kuszewski
Sancroft & GRI



Silviu Livescu
Baker Hughes
SPEI, DSEA TD



Tatiana Mitrova
SKOLKOVA, Oxford,
Columbia



David Reid
NOV & SPEI



Ariane Labadens
Schlumberger



Maria Capella
SEG Gaia Liaison



Nils Kaageson-Loe
Baker Hughes



Julien Perez
OGCI



Iman Hill
IOGP



Brian Sullivan
IPIECA



Fawaz Bitar
Chair SPE HSES
Executive Advisory
Committee



Matt Haddon
ERM



Marinma Dorado
Mindset Results



Miriam Winsten
AAPG Gaia Liaison

Quarterly

Gaia Resources

- ▶ [Gaia LinkedIn Community:](https://www.linkedin.com/groups/12464854/) <https://www.linkedin.com/groups/12464854/>
- ▶ [Sustainable Development TS:](https://connect.spe.org/sdts/home) <https://connect.spe.org/sdts/home>
- ▶ [Gaia Talks:](https://streaming.spe.org/?s=gaia)
<https://streaming.spe.org/?s=gaia>
<https://www.spe.org/en/events/live-events/>
- ▶ [Gaia Digital Assets:](https://spe.widencollective.com/c/2bnv38at) <https://spe.widencollective.com/c/2bnv38at>
- ▶ [Gaia Hub:](https://www.spe.org/en/gaia/) <https://www.spe.org/en/gaia/>



JOIN US!



A Programming Framework for Success

Planning Gaia co-branded events to engage and enable operations and R&D professionals in service of sustainable development and by extension our industry

1 PRIORITIES

Top sustainable development priorities related to our industry – in focus

2 PATHWAYS

Select one, two or all pathways for your program architecture. The Gaia pathways are those most aligned with SPE strengths thus providing the most additional and highly leveraged ways of progressing sustainability practices in our industry.

3 PRINCIPLES

Each event should adhere to all three principles. Use them to create strategic programming and to guide quality, relevance, reach and scale of your events and publications.

SPE Gaia Sustainability – “moving needles, not ticking boxes”

engaging and empowering engineers and scientists to generate scale and act with urgency and purpose

PRIORITIES

Energy System Transformation

Optimizing mix of hydrocarbons and alternative sources of energy to enable an inclusive transition towards net zero emissions in line with COP 21 targets.

Natural Capital & Regeneration

Employ natural capital to protect and regenerate raw stocks aided by technology and partnerships to create circular, carbon neutral/negative value chains. Learn the benefits of nature and its ecosystem services. Includes Gaia TREE program.

Social Responsibilities

In-country value, Just Transition, Diversity & Inclusion, Community Investment, Safety & Well-being at work; Systems Thinking; Circular Economy business models

PATHWAYS – SPE STRENGTHS

Innovation in Energy

New markets, new business models, new techniques, new technologies, new processes, new mindsets to evolve a supply of energy that supports human activity inside planetary boundaries

Measuring What Matters

What data do operations and R&D need in order to prioritize and allocate resources to innovative sustainability performance factors. What does fit-for-decision sustainability performance data look like?

Listening & Communication

R&D is furthest from the external stakeholders and yet may have the greatest opportunity to ensure our technologies and techniques take their concerns into account and build trust through technical knowledge sharing.

Innovation

Natural capital and regenerative approaches include Biomimicry, CO2 capture and other nature based solutions, distributed ledger, as well as value chain transformation and enhancements

Measuring What Matters

Applying our knowledge of data science and engineering to development or improvement of nature-based solutions and the quantification of natural capital.

Listening & Communication

Foster multi-stakeholder engagements to learn about and share best in class natural capital and regenerative practices

Innovation

Encourage a culture of innovation with regard to sustainable development opportunities - circular economy business models; just practices; stakeholder engagement; local development; collaboration; mindfulness and systems thinking; safety and well-being at work

Measuring What Matters

Not everything that matters can be counted – foster learning that helps business integrate the difficult to measure in ways that systematically integrate the practice of managing externalities

Listening & Communication

Create conditions for trust and success by scaling mastery of techniques of stakeholder engagement through our events and publications. Encourage study of connections between engineering and ethics, philosophy and social sciences.

PRINCIPLES

Aggregation

Avoid fragmentation in efforts, create an aggregated view through applying this unifying brand, disciplined use of this strategic framework and mobilization of our ecosystem of future makers, through our events and publications.

Engagement

Engage internal and external stakeholders to cultivate trust through technical knowledge sharing. Cultivate challenging exchanges and produce surprising solutions.

Collaboration

Collaborate with others to execute ambitions aligned with the scale and urgency of the challenges of operating business and sustaining quality of life that remains inside planetary boundaries.



Gaia Talks – an on-demand library for members

- SPE Live
- Podcasts
- e-Sessions
- Firesides




SPE Live: Panel
Gaia Talk – Measuring What Matters

Streamed live on 26 May 2020



SPE Live:
Roadmap for O&G in the Energy Transition

Streamed live on 10 June 2020



REDUCING METHANE EMISSIONS
IN THE O&G VALUE CHAIN

Streamed live on 2 July 2020



Gaia Talk: CCU
Outlook, Drivers & Barriers

Streamed live on 21 July 2020



SPE California
Sustainability Study Group Webinar

Welcome! You are invited to join a meeting: SPE California Sustainability Study Group - "How to Transition Oil & Gas Fields to Generate Geothermal Energy". Aft...



SPE Live
Oil & Gas 2050: Innovation & Sustainability

Streamed live on 6 August 2020



Taking Leadership:
Total's Carbon Footprint Reduction

Streamed live on 15 October 2020



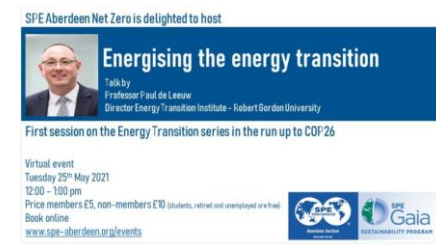
IEA World Energy Outlook

Streamed live on 4 November 2020



SPE LIVE: PANEL
Oil and Gas: How to Work Together for a Net Zero Future?

Streamed live on 14 December 2020



Energing the energy transition

First session on the Energy Transition series in the run up to COP26

See a listing of all Gaia Talks events here:
<https://streaming.spe.org/?s=gaia>

SPE Gaia / OGCI / IPIECA / IOGP Climate Series eSessions – Methane | #3 | Policy Focus and Industry Action

Includes a Live Event on 05/12/2021 at 4:00 PM (CEST)

[Register \(Free\)](#)



Gaia Talk:
The Economics of Building Net Zero

Streamed live on 2 February 2021



London SPE Net Zero Programme
5:00-6:30pm 11th May 2021



Is There A Future For Oil & Gas In A Net Zero World?



Climate & Energy Transition Events – Gaia-enabled

Methane Series by SPE Live - with OGCI/IPIECA/IOGP [CCUS and Natural Capital to follow] - sponsored by OGCI

SPE Gaia / OGCI / IPIECA / IOGP Climate Series eSessions

Methane | #1 | Detection & Quantification in a Rapidly Evolving Landscape

February 17th 2021, 0900 CST / 1500 BST.

<https://webevents.spe.org/products/spe-gaia-ogci-ipieca-iogp-climate-series-esessions-methane-1-detection-quantification-in-a-rapidly-evolving-landscape>

SPE Gaia / OGCI / IPIECA / IOGP Climate Series eSessions

Methane | #2 | Technology and Investment Focus

March 31st 2021, 0900 CST / 1500 BST

<https://webevents.spe.org/products/spe-gaia-ogci-ipieca-iogp-climate-series-esessions-methane-2-technology-and-investment-focus>

SPE Gaia / OGCI / IPIECA / IOGP Climate Series eSessions

Methane | #3 | Policy Focus and Industry Action

May 12th 2021, 0900 CST / 1500 BST

<https://webevents.spe.org/products/spe-gaia-ogci-ipieca-iogp-climate-series-esessions-methane-3-policy-focus-and-industry-action>

SPE Gaia / OGCI / IPIECA / IOGP Climate Series eSessions

Methane | #4 | Satellite Measurements Data in Support to Detection and Quantification of CH₄ Emissions

June 16th 2021, 0900 CST / 1500 BST

<https://webevents.spe.org/products/spe-gaia-ogci-ipieca-iogp-climate-series-esessions-methane-4-satellite-measurements-data-in-support-to-detection-and-quantification-of-ch4-emissions>

SPEI Events

[SPE Virtual Workshop: Hydrogen's Role in Fuelling the Energy Transition 16-17 November 2021](#)

Chair: John Butler

[Geothermal Workshop: December 1-2, 2021, The Hague](#)

Chair: Rebecca Shultz & John Clegg

CCUS & Decarbonization [all virtual or hybrid]

[Thriving in the Energy Transition through Emissions Management](#)

15-17 September, Australia

Chairs: Bernadette Cullinane & Brett Doherty

[CCUS Conference](#)

26-29 October, Aberdeen

Chair: Russ Gilbert & Clara Altobell

[Decarbonizing the Economy - the future of Carbon Storage](#)

9-11 February 2021

Chairs: Femke Perlot-Hoogeveen & Denis Voskov

[Sustainability Stewardship CCUS Technologies - Current Status and Future Plans](#)

24-25 February 2021

Chair: Aesha Al Keebali ADNOC

[Offshore CCUS - Size of the Prize](#)

6-13 April 2021

Chairs: Mike Godec & Alex Bump

[CCUS in Canada - opportunities for a Net Zero Future](#)

11-13 May 2021

Chairs: Silviu Livescu & David Languille



The oil and gas industry and the SDGs

Accelerating action

Example of top-down industry association best practices to support scaling



The SDG Atlas (2017) provides an overview of how the oil and gas sector interacts and contributes to all 17 SDGs



The Roadmap (2021) builds on the foundations of the SDG Atlas by presenting a series of impact opportunities which focus on where the sector can maximise its contributions to the SDGs

Beyond Sustainability – parting thoughts

- Who would argue that our way of life and balance with nature is sustainable today? So, we're clearly not trying to sustain that.
- Who would argue that the current state of our ecosystems are in a desirable place?
- We must move beyond sustainability into being stewards of the land and into regenerating the health of our ecosystems. Carbon is only one aspect of this.
- This may sound alien for a petroleum engineer. Why? We find, develop, and optimize the production of natural resources. What if we just oriented our efforts to a different type of natural resources?
- What if we had to figure out how to make this work in parallel with our day-job? We have a responsibility to continue producing the safest, lowest GHG intensity hydrocarbons with zero leaks to the environment. If we stop even for a day, it would undermine the global economy. So, it's not either/or, it's both
- Don't forget about supporting people to help themselves and contribute in any way they can to create social benefits and reduce their total environmental footprint

