

Guiding Principle	Action #	Action	Year	Owner
GP-1 Continually Reduce Methane Emissions	1	Develop and embed carbon price to support operational interventions to deliver Real Sustainable Reductions and Methane Intensity Targets	2018	Gordon Birrell
	2	Develop and implement a Near Zero Methane Project Standard	2019	David O'Connor
	3	Update L48 Facility Design Manual (FDM) to incorporate design focus on reducing methane emissions from new & modified facilities	2019	David Lawler
	4	Develop integrated methane technology plan to drive reductions in methane emissions in projects	2019	David O'Connor
	5	Develop and execute prioritised plan to drive significant reductions in operational flaring emissions (prioritising Angola)	2020	Fuzzy Bitar
	6	Develop and execute prioritised plan to reduce L48 methane emissions from pneumatic controllers and pumps and develop long term solution for remote power	2020	David Lawler
GP-2 Gas Value Chains	7	Develop and execute prioritised plan to influence reduction of methane emissions in non-operated JVs	2019	Fuzzy Bitar
	8	Build on blockchain project to develop accredited low emissions gas scheme for the gas value chain	2020	Morag Watson
GP-3 Improve Data Accuracy	9	Develop integrated methane technology plan to drive improvements in methane data accuracy	2018	Ahmed Hashmi
	10	Develop plan to evaluate and improve the accuracy of flare emissions data (metered volumes & combustion efficiency)	2019	Fuzzy Bitar
	11	Design and implement a standardised Upstream Leak Detection and Repair (LDAR) programme	2019	Fuzzy Bitar
GP-4 Sound Advocacy & Policy	12	Develop and implement consistent Group, Segment and Regional policies and advocacy positions on methane	2018	Dominic Emery
	13	Develop and implement US methane advocacy plan	2018	Mary Streett
GP-5 Transparency, Communications & Reporting	14	Deliver External Gas & Methane Communications Campaign to demonstrate BP's leadership on methane	2019	Rachel Woods
	15	Develop and deliver internal communications plan to educate BP employees on carbon and methane science and BP's role in reducing carbon/methane emissions	2019	Steve Shaw
	16	Develop industry leading position on methane reporting transparency	2020	Dave King

Upstream Methane Plan - L48 Actions					
Guiding Principle	Action #	Action	Year	Owner	Responsible
GP-1 Continually Reduce Methane	1	Real Sustainable Reduction - Methane L48 committed to reducing CO2e emission by 700,000 MT CO2e between 2017 and 2025 versus 2016 CO2e baseline inventory a. 350,000 MT CO2e to be reduced between 2017 and 2019 b. 350,000 MT CO2e to be reduced between 2020 and 2025	2019+	Dave Lawler	Brian Pugh/ Kola Fagbayi
	2	LDAR Focus on find and fix LDAR. Implement LDAR prioritized on 30% of production in 2018/19, 60% of production in 2019/20, and 100% of production by 2020/21. Perform LDAR utilizing existing technology and continue trials to identify efficient and effective alternative means to accomplish LDAR aligned with L48 IO mission.	2018/19/20	Dave Lawler	Brian Pugh
	3	Remote Power Initiate further evaluation in 2018 of additional remote power options for L48's dispersed facilities for pneumatic controllers and pumps.	2018/19	Dave Lawler	Kola Fagbayi
	4	High Bleed Controller Replacement Replace all HB's in L48 by mid 2019.	2019	Brian Pugh	Will Burton
	5	NBU Pneumatic Pumps (Heat Trace Pumps) Install identified technology (T12 temp switches) in west area of NBU.	2018	Brian Pugh	Kevin Lanan
	6	NBU Pneumatic Pump & Liquid Unloading Trials Continue ongoing trials, solar pumps, routing pump vents to location fired equipment, removing select pumps, placing pumps in series and Project Kelvin.	2018/19	Brian Pugh	Kevin Lanan
	7	Select and Implement Tried Technology Select technologies to be implemented L48 wide and execute successfully piloted technologies for pneumatic pumps, liquids unloading and LDAR.	2019+	Dave Lawler	Brian Pugh
	8	Crowd Source Pneumatic Solution Use crowd-sourcing or other creative ways to find solutions to the big problem, e.g. pneumatics.	2019	Dave Lawler	Kola Fagbayi
	9	L48 Facility Design Manual (FDM) Update FDM to incorporate design focus on reducing methane emissions from new & modified facilities as appropriate.	2019	Dave Lawler	Kola Fagbayi
GP-2 Advance strong methane performance across the gas value chain	1	API Environmental Partnership Take a leading role in driving forward the Environmental Partnership and identifying natural gas value chain partners to join the program.	2019	Dave Lawler	Kola Fagbayi
	2	L48 NOJV's Build NOJV and other business partners into L48 Carbon Road Map.	2020+	Dave Lawler	Kola Fagbayi
GP-3 Improve accuracy of methane emissions data	1	L48 Emission Inventory Improvement Hold peer assist to review L48 internal GHG calculation approach (inventory, emission factors, calculation methodology). Implement annual review of internal GHG approach and emissions by L48 RCE Mgr.	2018	Kola Fagbayi	Bob Chou
	2	Leak Detection & Quantification Trials Continue current and proposed expanded leak detection and quantification trials (mAIRsure, Providence, drones, satellites, Rebellion). Continue evaluation and decision through L48 governance of emerging technology.	2018	Kola Fagbayi	Kirk Steinle
	3	Peer Benchmarking Develop benchmarking approach to understand peer performance and best practices in methane management.	2019	Dave Lawler / Gordon Birrell	Kola Fagbayi (US) and Liz Rogers (Global)
	4	GHG Reporting - Data Improvement Ensure accuracy of data in L48's systems of record that are used as inputs to emissions calculations; including equipment inventory, production data, operational runtime, and episodic events (i.e. liquid unloading).	2019	Brian Pugh	Will Burton
GP-4 Advocate sound policy and regulations on methane emissions	1	Methane Leadership Define what methane leadership means for L48. Reframe L48 Carbon Road Map to align and support that definition.	2018	Kola Fagbayi	Kirk Steinle
	2	US/L48 Communications Plan Develop and implement US/L48 methane communications plan. Align with Group Communications Campaign, US Advocacy Principles and "what we stand for" work from the C&EA Team.	2018	Mary Streett/Kola Fagbayi	Liz Sidoti
	3	State Industry Group Participation Develop state industry group participation level for methane related issues (for each state) (chair, lead from within, participation, observe).	2018	Steve DeGiusti	Gabrielle Sitomer/ Kirk Steinle
	4	L48 Tactical Advocacy Strategy Develop list of top 5 advocacy points associated with Methane and weave into the already developed advocacy strategy. Continue to implement strategies and update to incorporate elements of the US Advocacy Plan and the "what we stand for".	2018	Kola Fagbayi	Dana Wood
	5	L48 Leadership Workshop Develop and conduct a L48 Leadership workshop.	2019	Dave Lawler	Kola Fagbayi
	6	Develop a L48 "Methane Mindset" Develop communications to engage leaders and workforce to build zero methane emissions mindset.	2019	Dave Lawler	Kola Fagbayi
	7	API Environmental Partnership Develop API Environmental Partnership Plan to define how L48 participates in the broader mission of industry collaboration in the program.	2019	Kola Fagbayi	Kirk Steinle
GP-5 Increase transparency	1	Communicate Externally on L48 Actions Report on L48 historical and current actions to proactively reduce methane emissions through the Group Sustainability Report & US/ L48 External Communications Plan (C&EA).	2019	Dave Lawler	Kola Fagbayi

Action #	Action	Date	Accountable	Responsible
1	Develop and embed carbon price to support operational interventions to deliver Real Sustainable Reductions and Methane Intensity Targets	2018	Gordon Birrell	
1.1	Develop proposal for a carbon price for operations including how this could be embedded through existing processes	May-18	Gordon Birrell	Bruce Price
1.2	Apply a carbon price to operational interventions, supported by internal financial framework - use \$40/te or higher price	2018	Dominic Emery	
1.3	Develop group-level carbon forecast and pricing model - 5-year projection	2018	Dominic Emery	
2	Develop and implement plan to deliver 'Near Zero' Methane Emissions in Projects	2019	David O'Connor	
2.1	Define what 'near zero methane' means for projects	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.2	Work with IOGP to build low methane specs into JIP-33	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.3	Define project design requirements for low GHG and methane emissions start up	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.4	Strengthen project processes to ensure that deviations from design intent for methane reduction are communicated and approved at the appropriate level	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.5	Revisit GPO Carbon Principles with a methane lens	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.6	Define process to integrate well flowback considerations GWO considerations into project concepts	2018	Richard Mortimer	Amrita Lulla and John Kennedy
2.7	Incorporate methane reduction technologies into MPcP v5	2019	Richard Mortimer	Amrita Lulla and John Kennedy
2.8	Benchmark and report the methane 'Intensity' of projects in Appraise and Select	2019	Richard Mortimer	Amrita Lulla and John Kennedy
2.9	Supplier requirements GFH (Global Facilities Hardware) to require suppliers of equipment to provide GHG operational performance data specifications	2019	Richard Mortimer	Amrita Lulla and John Kennedy
3	Update L48 Facility Design Manual (FDM) to incorporate design focus on reducing methane emissions from new & modified facilities	2019	David Lawler	
3.1				
3.2				
4	Develop integrated methane technology plan to drive reductions in methane emissions in projects	2019	Ahmed Hashmi	note - changed from Dave O'Connor
4.1	Develop technology plan objectives and framework	2018		
4.2	Develop technology plan	2018		
4.3	Incorporate methane reduction technologies into MPcP v5	2019		repeated above in action 2
4.4	Work with IOGP to build low methane specs into JIP-33	2018		repeated above in action 2
4.5	Supplier requirements GFH (Global Facilities Hardware) to require suppliers of equipment to provide GHG operational performance data specifications	2019		repeated above in action 2
5	Develop and execute prioritised plan to drive significant reductions in operational flaring emissions (prioritising Angola)	2020	Fuzzy Bitar	
5.1	Agree plan to enable (Angola) PSVM and (N.Sea) Glen Lyon to operate to their low-emission designs	3Q18	Matt Werner	
5.2	Develop Segment Flaring Practice to drive improved flaring performance in the regions	2018	Dave Wall	
5.3	Develop operational mindset (GOO leadership to operators) to continually improve flare performance	2018	Dave Wall	
5.4	Identify and trial at a site technology to improve flaring performance (e.g. technology to better monitor / detect unit flare to allow pilot/purge rates to be minimised)	2018	Ahmed Hashmi	
6	Develop and execute prioritised plan to reduce L48 methane emissions from pneumatic controllers and pumps and develop long term solution for remote power	2020	David Lawler	
6.1	Remote Power: Initiate further evaluation in 2018 of additional remote power options for L48's dispersed facilities for pneumatic controllers and pumps.	2018/19	Dave Lawler	Kola Fagbayi
6.2	High Bleed Controller Replacement: Replace all HB's in L48 by mid 2019.	2019	Brian Pugh	Will Burton
6.3	NBU Pneumatic Pumps (Heat Trace Pumps): Install identified technology (T12 temp switches) in west area of NBU.	2018	Brian Pugh	Kevin Lanan
6.4	NBU Pneumatic Pump & Liquid Unloading Trials: Continue ongoing trials, solar pumps, routing pump vents to location fired equipment, removing select pumps, placing pumps in series and Project Kel	2018/19	Brian Pugh	Kevin Lanan
6.5	Select and Implement Trialed Technology: Select technologies to be implemented L48 wide and execute successfully piloted technologies for pneumatic pumps, liquids unloading and LDAR	2019+	Dave Lawler	Brian Pugh
6.6	Crowd Source Pneumatic Solution: Use crowd-sourcing or other creative ways to find solutions to the big problem, e.g. pneumatics.	2019	Dave Lawler	Kola Fagbayi
7	Develop and execute prioritised plan to influence reduction of methane emissions in non-operated JVs	2019	Fuzzy Bitar	
7.1	Develop plan to influence PAE to reduce methane emissions with focus on largest sources (e.g. venting)	2019	Andy Collins	
7.2	Develop plan to influence GUPCO to reduce methane emissions with focus on largest sources (e.g. venting)	2019	Andy Collins	
7.3	Develop plan to influence L48 NOJV partners to reduce methane emissions with focus on largest sources	2019	Dave Lawler	Kola Fagbayi
7.4	Develop strategy with the World Bank to influence flaring performance in Iraq (Rumaila)	2019	Dave King	
7.5	Develop plan to encourage Rosneft to join the Methane Guiding Principles	2018	?	?
7.6	Use Advocacy frame for the case for gas (GP4) to work with and influence NOJV partners	2019	Andy Collins	
7.7	Develop process to generate robust forecast for NOJV methane emissions	2019	Andy Collins	
7.8	Equip OBO Business Managers to actively influence OBO projects and operations partners to lower carbon intensity (incl. methane)	2019	Andy Collins	
8	Build on blockchain project to develop accredited low emissions gas scheme for the gas value chain	2020	Morag Watson	
8.1	Identify and engage suitable partners (Inc. suppliers, partners Alternative Energy and IST) to develop accredited low emissions scheme for the gas value chain	2020	Morag Watson	
8.2	Work with industry partners (e.g. Guiding Principles) to define industry methodology for determining methane emissions across the value chain	2018	Liz Rogers	
8.3	Work with industry partners (e.g. Guiding Principles) to define what 'near-zero methane emissions' means for the value chain	2019	Liz Rogers	
9	Develop integrated methane technology plan to drive improvements in methane data accuracy	2018	Ahmed Hashmi	
9.1	Develop a plan to use analytics to identify and quantify methane sources (including wells) and inform methane management interventions	2018	Morag Watson	
9.2	Develop proof of concept for drone-mounted OGI camera in operations	2018	Morag Watson	
9.3	Develop an upstream prioritised plan to achieve continuous methane monitoring using top down and bottom up emissions monitoring technologies enabling real time data collection, integration and analysis to inform d	2019	Morag Watson	
9.4	Identify suitable test sites in BP for trialing methane detection and reduction technologies, e.g. wellsite power generation	2019	Dave King	
10	Develop plan to evaluate and improve the accuracy of flare emissions data (metered volumes & combustion efficiency)	2019	Fuzzy Bitar	
10.1	Evaluate flare uncertainty (metering and combustion) across GOO operations	2018	Matt Werner	
10.2	Evaluate flare uncertainty (metering and combustion) across GWO operations	2019	Andy Kreiger	Margaret Laney
10.3	Define flare metering performance requirements and build maintenance requirements into existing maintenance processes	2019	Matt Werner	
10.4	Define flare combustion performance requirements and build maintenance requirements into existing maintenance processes	2020	Matt Werner	
10.5	Repair non-functioning flare meters in Angola	2018	Matt Werner	
10.6	Develop plan to deliver flare metering and combustion performance requirements across GOO	2018	Matt Werner	
11	Design and implement a standardised Upstream Leak Detection and Repair (LDAR) programme	2019	Fuzzy Bitar	
11.1	Review and update Upstream methane source surveys, incorporating lessons from first surveys to close gaps	2018	Dave Wall	Doog Wright
11.2	Define GOO LDAR requirements	2018	Dave Wall	Doog Wright
11.3	Define GWO LDAR requirements	2019	Dave Wall	Doog Wright
12	Develop and implement consistent Group, Segment and Regional policies and advocacy positions on methane	2018	Dominic Emery	
12.1	Refresh the IMWG purpose and process amd associated Advocacy Governance to make it fit for purpose to deal with fast-paced issues such as this	2018	Dominic Emery	
12.2	Finalize statement of principles for advocacy on methane regulation in the US onshore environment (L48 and Alaska) - being clear which are intended for global application and which are specific to the US onshore envirc	2018	Mary Streett	Bob Stout
12.3	Develop specific model elements of what good regulations should include, for use in advocacy globally (draw on lessons from post Macondo advocacy)	2018	Dominic Emery	
12.4	Review and make recommendation on future and continued participation in all methane-related voluntary programmes	2018	Dave King/Liz Rogers	
12.5	Host event to engage and build alliances with key NGOs open a dialogue on the methane challenge	2018	Dominic Emery/Bob Stout	
12.6	Cross-industry methane group. Establish a cross-industry methane group (e.g. multi-industry JIP including NGOs, agriculture, landfill operators etc).	2018	?	do we want one in the US and one in the UK? And how doe
12.7	Be instrumental in encouraging at least 3 countries where we operate to sign up to CCAC and WB30 (AGT, Angola, Indonesia, Trinidad, Oman, Egypt), and those that have signed up to fully implement	2018	William Linn	depends on outcome from action line 69
13	Develop and implement US methane advocacy plan	2018	Mary Streett	Bob Stout
13.1	Develop US methane advocacy plan	2018	Mary Streett	Bob Stout
13.2	Develop State Industry Group participation level for methane related issues (for each state) (chair, lead from within, participation, observe)	2018	Dave Lawler	Gabrielle Stotmer
13.3	Agree BP's level of participation in the API Environemntal Partnership (chair, lead from within, participate, observe)	2018	Susan Dio/Dave Lawler	
13.4	Design an analytics plan to quickly identify and enable unified response from leadership to new anti-O&G proposed regulations	2019	Mary Streett	
13.5	Build strategy to advocate for improvements to the EPAs GHG Reporting Rule	2018	Bob Stout	
14	Deliver External Gas & Methane Communications Campaign to demonstrate BP's leadership on methane	2019	Rachel Woods	
14.1	Build the group advocacy strategy (GP4) into the Group communications plan to simply and powerfully explain the key issues to external stakeholders	2018	Rachel Woods	
14.2	Prioritise and deliver stakeholder engagement through BP senior leaders to communicate the gas story and elevate key actions from this plan.	2018	Rachel Woods	
14.3	Run media/stakeholder (e.g. Policy Makers, Customers and Investors) visits to demonstrate how we are managing methane at key facilities e.g. Khazzan, Sangachal, L48	2018	Rachel Woods	
14.4	Develop and implement US/L48 methane communications and advocacy materials and plan aligned with Group campaign	2018	Mary Streett	
14.5	Create agenda-setting technical and media content where this supports the industry position and demonstrates BP's leadership.	2019	Rachel Woods	
14.6	Publish independent data on the methane science cycle with Princeton and with our technology partners on methane monitoring.	2018	Rachel Woods	
14.7	Increase BP visibility on gas by sponsoring a key global platform e.g. World Future Energy Summit, or cross-sector global methane summit	2019	Rachel Woods	
15	Develop and deliver internal communications plan to educate BP employees on carbon and methane science and BP's role in reducing carbon/methane emissions	2019	Steve Shaw	
15.1	Develop Upstream methane employee communications plan	2018	Steve Shaw	
15.2	Develop and implement L48 internal methane communications plan aligned with Segment communication plan	2018	?	
15.3	Develop and deliver BP SLL/Executive education programme to instil culture of methane leadership across Upstream	2018	Dave King	methane guiding principles action
15.4	Develop and implement internal (e.g. Helios) and external open innovation challenges for methane reduction	2019	Rachel Woods	
16	Develop industry leading position on methane reporting transparency	2020	Dave King	
16.1	Develop Segment methodology for reporting methane emissions, using tiered approach to define levels of data accuracy			
16.2	Work with trade associations/Methane Guiding Principles to develop consistent methane emission reporting methodologies e.g. IPIECA reporting guidance	2018	Dave King	
16.3	Work with trade associations to develop consistent methane emission benchmarking methodology	2018	Liz Rogers	
16.4	Publish a methane data supplement enabling external scrutiny of sources and methane reduction activity, including L48	2019	Liz Rogers	
16.5	Provide a breakdown of emissions by source and an explanation of methodologies used to derive data.	2019	Liz Rogers	
16.6	Report on L48 historical and current actions to proactively reduce methane emissions, e.g. Group Sustainability Report.	2019	Liz Rogers	
16.7	Include all material NOJVs and L48 EPA reported emissions in BP reports.	2020	Dave King	
16.8	Facilitate independent external auditing of methane data and calculations.	2020		
16.9	Conduct comparison of US with non-US methane emission methodologies e.g. calculate Upstream fugitive emissions using EPA emisison factors	2018	Dave King	Rob O'Brien
	Lead on Guiding Principles Play leadership role in driving adoption and implementation of the Methane Guiding Principles e.g. lead development of Methane Saving Rules and share practices on how to codify these rules through engineering practics and procedures	2018	Dave King	does this fit better under GP1?
	Reporting 20-year GWP Report methane emissions on a 20-year GWP basis as well as 100-year.			suggest deleting