EI 3591

G+ Global Offshore Wind Health and Safety Organisation

2024 incident data report

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In partnership with

energy institute

www.gplusoffshorewind.com

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Contents

Introduction from the Chair

I am delighted to introduce the 2024 G+ incident data report, which describes the performance trends and key insights as the offshore wind industry witnessed another year of growth across the globe. Sharing this information with you is a crucial part of the G+ mission of improving health and safety throughout the offshore wind industry, and we sincerely hope that the information we are sharing will help all those involved in the industry understand the risks associated with the technical and demanding tasks of wind farm development, construction, and operation.

Throughout 2024, we saw the industry continuing its growth, with hours worked rising to a new high of 79 million, an increase of 27 % on 2023's 62 million, with multiple sites moving from the final stages of construction and into operation. We have seen a rise both in the total recordable injury rate (TRIR) and in the lost time injury frequency (LTIF), with TRIR rising by 7 %, from 2,73 in 2023 to 2,93 in 2024, and LTIF rising by 19 %, from 1.07 in 2023 to 1.27 in 2024.

All reporting categories (injuries, hazards, near misses, and reports of asset damage) can be tagged as having 'high potential', i.e. having the greatest likelihood of causing serious harm regardless of the actual consequence. In 2024 we saw an increase in high potentials, rising from 11 % to 12 % of the total year on year.

Jack-up vessels/barges account for 14 % of all incidents resulting in an injury, with 92 incidents in 2024, 42 % higher than in 2023, the most of any single incident area for 2024. Development sites saw the highest number of incidents resulting in an injury reported to date, 42. Both topics have been given a dedicated section in the report, as well as a deep dive into walk to work incidents, a subject that has been a focus to our members and the industry as a whole.

G+ is reporting a fatality this year. An individual lost their life while undertaking disassembly/scrapping work of a rotating bucket of a monopile up-ending tool. Two workers were undertaking the works on a scaffold onboard a transport barge moored along a quayside. A part of the bucket being dismantled dropped uncontrolled, causing the scaffolding to collapse, resulting in one fatal fall from height and one hospitalisation. Further details will be released on Toolbox once the investigation is complete. Our thoughts are with the family, colleagues and friends of the individuals involved. This tragedy highlights the importance of keeping our workforce safe and healthy during these difficult tasks, and to ensure that the issues flagged by the data are shared and acted on so that further tragedies like this one may be prevented in the future.

The data presented in this report are based on our commitment to transparency and accountability. We hope that it will serve as a valuable resource for the offshore wind industry, and that it will help us to continue to improve our health and safety practices. We are also using the information in this report to provide guidance to technicians and help get needed information closer to those working on site. Our performance dashboard is available to anyone who wishes to further analyse the data and better understand the global offshore wind health and safety outlook. If you would also like to review specific incidents, and understand what lessons can be learned from them, please see our Toolbox website, which is available to everyone, where we keep a library of major incidents of interest to our members. Please see our website at https://toolbox.energyinst.org/home to learn more.

Before concluding this introduction, I would note some of the changes introduced to the report structure. Previous G+ annual incident data reports have collectively analysed hazard observations, near misses, reports of asset damage only, and all injuries (first-aid cases through to fatal events). We have received feedback that on occasion this had been misunderstood with, e.g. hazard observations being equated to injuries. In an effort to bring greater clarity to the analysis and a better understanding of the trends and areas of risk, we have adjusted the report to have distinct sections looking at incidents that resulted in an injury, incidents where only asset damage was reported, and a section dedicated to near misses and hazard observations. High potentials, regardless of the outcome, are looked at in their own section also. We hope this brings greater clarity to the report, the trends and areas of risk. The PowerBI dashboard available on the G+ website has also been structured differently for this reason.

We have also introduced the following changes to the report: greater information on the companies reporting, the countries in the database and the size of the database. A preliminary analysis of lost time injuries (fatalities and lost work day cases) by nature of the injury and body part injured, will also form part of the reporting criteria for 2025 reporting. We hope these changes bring greater understanding of health and safety risks in our industry, and we welcome your feedback via gplus@energyinst.org.

Overview of G+ member sites and scope of reporting

The G+ requires its member companies to provide incident data on a quarterly basis, which are anonymised for analysis by the Energy Institute and reviewed and scrutinised by industry experts. The resulting report is published each year for public use. In addition, throughout the year, quarterly reports are issued to the G+ Board and focal groups for in-depth examination and analysis. These reports are used to identify key risk areas, monitor performance trends, and inform G+ work programmes.

To further enhance the analysis process, Deep Dive data meetings are held quarterly, bringing together the collective expertise of G+ member companies to scrutinise industry performance and determine specific areas of focus and attention. An annual data reporting review meeting is also held to assess the overall process and identify opportunities for improvement.

To continually improve the process, the template used for data collection is reviewed, streamlined, and enhanced each year in line with industry feedback. A full list of the incidents included in the G+ report, which includes information submitted by G+ members and associates, is published on the G+ website, through Power BI.

In 2024, the G+ received data from Europe, Asia, Australia, and the United States of America. New countries that we are reporting on for the first time this year:[1] Finland and India. The database continued to grow with 79 million work hours reported for 2024.

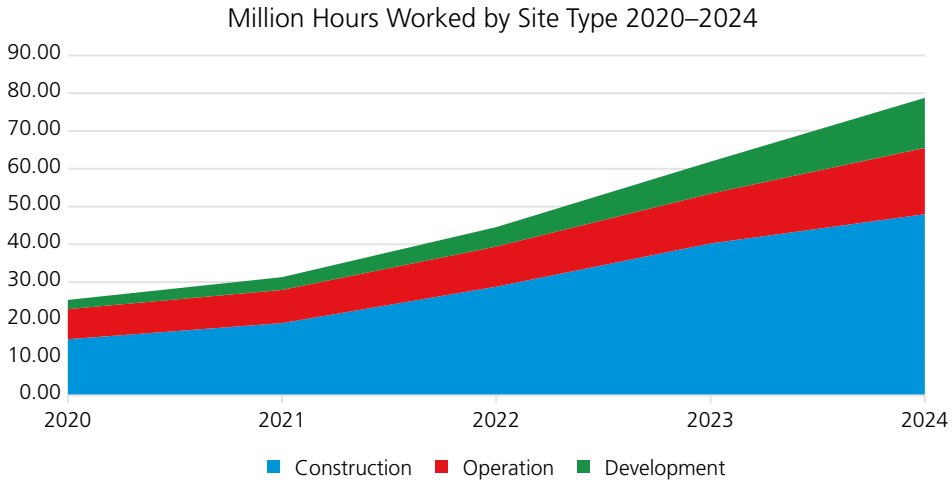

Figure 1: Workhours reported in the G+ database, 2020–2024, by site type

As our membership changed between 2023 and 2024, so too did the make-up of our database. We have included a list of reporting members and reporting countries, showing which member and country appears in each year. The changing membership means that new sites are included in our dataset, and therefore the comparison between 2023 and 2024 will not contain the exact same sites. Sites can also change project phase from year to year.

[1] There were no data reported for Belgium in 2023, but it is not new in the database. Changes in G+ membership, reporting companies and project ownership can sometimes lead to fluctuation like this.

However, the trends that we have identified in our report are consistent both among all sites that appear this year, and those sites that appear in both years. To make our report as readable and useful as possible, we have chosen to include the full dataset, as we believe that this provides the best possible overview for the industry as a whole.

Table 1: G+ Database overview by member		
Reporting members and associates	**2023**	**2024**
BP		X
Copenhagen Infrastructure Partners	X	X
Corio	X	X
Dragados		X
EDF Renewables	X	X
EnBW		X
Eneco	X	X
Equinor	X	X
Northland Power	X	
Flotation Energy		X
Iberdrola	X	X
Ocean Winds	X	X
Orsted	X	X
RWE	X	X
Siemens Gamesa	X	X
Skyborn		X
SSE	X	X
Thistle Wind Partners		X
Total		X
Vattenfall	X	X

Table 2: G+ Database overview by location		
Reporting countries and regions	**2023**	**2024**
Aisa-Pacific (APAC)	X	X
Australia	X	X
Belgium		X
Denmark	X	X
Finland		X
France	X	X
Germany	X	X
India		X
Indonesia		X
Ireland	X	X
Japan	X	X
Netherlands	X	X
Nordics and Poland	X	X
Norway	X	X
Philippines	X	X
Poland	X	X
Portugal	X	X
Singapore	X	X
South Korea	X	X
Spain	X	X
Sweden	X	X
Taiwan	X	X
Thailand		X
United Kingdom	X	X

Note: for some members with sites in development, the work hours are reported across regions and not entered by country.

2024 highlights

Key facts and figures

1,967 total unique reports, including:
- 42 injuries, 56 asset damage only, 38 near hit/misses and 30 hazards on development sites;
- 403 injuries, 267 asset damage, 279 near hit/misses and 225 hazards on construction sites;
- 228 injuries, 52 asset damage, 104 near hit/misses and 243 hazards on operational sites;
- no reports from sites under decommissioning, and
- 245 out of the 1,967 reports were classified as high potential.

The injuries included:
- 1 fatality;
- 99 lost work day injuries;
- 57 restricted work day injuries;
- 74 medical treatment injuries, and
- 48 incidents resulted in emergency response and medical evacuation (ERME), across all injury severities.

Top three work process are:
- lifting operations: 29 injuries, 95 asset damage, 100 near hit/misses and 58 hazards reported.
- routine maintenance: 37 injuries, 25 asset damage, 30 near hit/misses and 86 hazards reported.
- manual handling: 121 injuries, 5 asset damage, 7 near hit/misses and 7 hazards reported.

Overall safety statistics

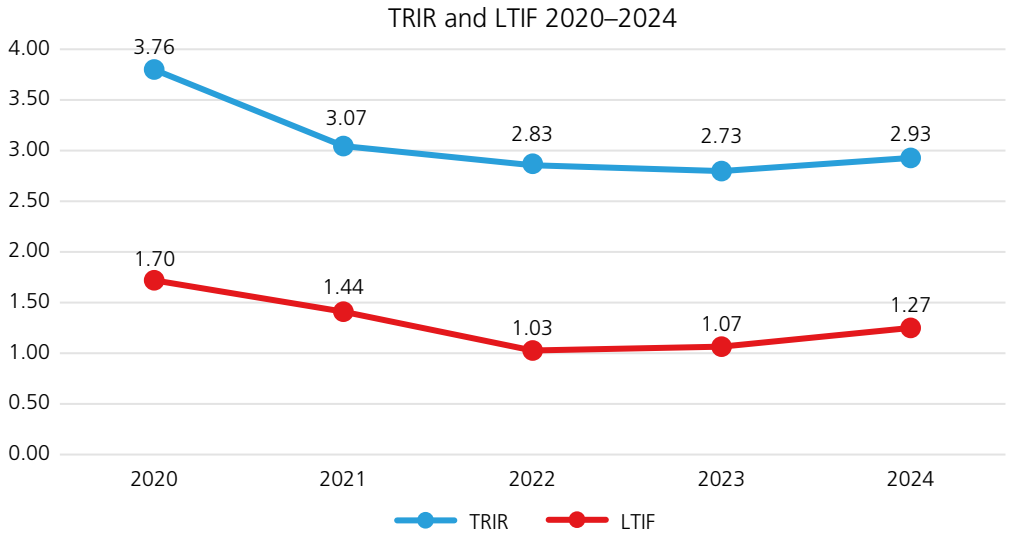

Figure 2: TRIR and LTIF, 2020–2024

In 2024, the total amount of hours worked increased by 27 %, from 61,9 in 2023 to 78,8 in 2024. Over the same period, the TRIR saw an increase of 7 %, from 2,73 to 2,93. LTIF rose by 19 %, from 1,07 to 1,27.

Against the backdrop increase of 27 % in reported hours worked, the increases in TRIR and LTIF were driven by annual increases in the number of restricted work day injuries (73 %) and increase in lost work day injuries (52 %). Medical treatment injuries rose by 6 %, below the increase in work hours.

For the second time in its reporting history, G+ recorded a fatality. During disassembly and scrapping works on a monopile, the scaffolding on which the workers were standing collapsed, resulting in one of the workers losing their life and the second worker suffering a serious injury requiring hospitalisation. Further details will be released on Toolbox once the investigation is complete.

Reports of asset damage saw a slight decline over 2024, falling from 390 in 2023 to 375 in 2024. This drop was largely driven by declines in operation sites, where asset damage events fell 37 %, from 82 to 52. However, this decline was mitigated by the increase in development site asset damage events, which increased by 229 %, from 17 to 56. For further details, please see the section 'Analysis of asset damage reported'.

The number of hazards observations reported (498) was 24 % higher than the same figure for 2023, which was 401. This is encouraging to see as it shows a growing reporting culture, the larger volume observations in respect of hazard and near hit/miss enables a more significant analysis, which is particularly helpful when the G+ embarks on projects and has these reports to review and understand the issues facing the front-line. The trends from this data are covered in the section 'Analysis of hazards and near misses reported'.

High potential reports, those hazards or incidents with the greatest likelihood of causing serious harm regardless of actual consequence, have seen an increase, rising 34 % year on year to 245 reports, representing 12 % of the 2024 total.

Table 3: G+ Data overview 2020-2024

	2020	2021	2022	2023	2024
Work hours (millions)	25,3	31,3	44,6	61,9	78,8
Actual consequence					
Fatality	0	0	0	1	1
Lost work day injury	43	45	46	65	99
Restricted work day injury	30	20	36	33	57
Medical treatment injury	22	31	44	70	74
First aid injury	197	283	283	374	442
Asset damage	148	85	157	390	375
Hazard	106	81	70	401	498
Near hit/miss	193	221	268	344	421
Total reports	**739**	**766**	**867**	**1 678***	**1 967**
TRIR	3,76	3,07	2,83	2,73	2,93
LTIF	1,70	1,44	1,03	1,07	1,27

Notes:

- Table shows last five years. Full dataset can be found on our website, where an interactive version of this table appears, allowing users to filter this table based on variables such as country or site type.
- This number differs from that reported in the 2023 annual report. Post-publication a duplicate entry was identified, this is corrected here and in the PowerBI database available on the G+ website.

Definitions

TRIR: The number of recordable injuries (fatalities + lost work day injuries + restricted work day injuries + medical treatment injuries) per 1,000,000 hours worked.

LTIF: The number of recordable injuries (fatalities + lost work day injuries) per 1,000,000 hours worked.

Serious incidents outside of the scope for G+ reporting

The G+ incident data covers the activity of G+ reporting members from the development phase through to decommissioning offshore wind farms. The scope includes activities both onshore and offshore, if directly related to the project, while excluding corporate/central functions. The G+ dataset is therefore intentionally focused on the front-line activity at the wind farm sites. This scope excludes manufacturing of wind turbine generators (WTGs) at the WTG original equipment manufacturers' (OEM) site and the fabrication of foundations, as these activities are conducted under the safety management systems of the suppliers. The scope also reflects contractual boundaries, for example an incident on a vessel may not be in the scope for G+ reporting if it occurs during activities outside of the contractual boundary; however, it would likely be in scope for other industry databases, such as International Marine Contractors Association's (IMCA) in this example.

In this section of the report, the G+ acknowledges fatal and serious incidents that occurred in 2024 out of scope of G+ reporting, but nonetheless present opportunities to learn and improve safety in the industry. This information has been included where the G+ has been made aware of the incident, as well as information that was confirmed by the incident owner or at least two separate sources of information. This list should not be seen as complete or representative of any industry sector mentioned. The G+ is sharing these incidents in the desire to raise awareness and to create greater opportunities for learning and improvement. The G+ is encouraging all incident owners to make these available through Toolbox (web-app incident sharing and learning platform):

- A release of carbon dioxide from the fire suppression system at an onshore substation being commissioned, leading to three fatalities and 14 other injuries.
- A fatal fall from height during installation of safety gate latches on the roof of a topside module loaded on to a heavy transport vessel.
- A fatal fall from height inside a transition piece during fabrication when the eyebolt holding the fall-arrest system failed, dropped, hit the worker below and led to his unsecured fall.
- A fatal incident during fabrication of foundations when a crane collapsed and crushed a worker.
- An incident during fabrication of steel cans where a worker suffered a serious leg injury when the steel plate being rolled moved unexpectedly – incident shared via Toolbox. This was reminiscent of a fatal incident a couple of years before in very similar circumstances.

Recognising the prevalence of incidents at fabrication yards, in 2022 the G+ started work in this area. After a consultative stage with G+ members and the fabrication yard, a good practice guide aimed at the developers was published in 2024, available to download from the G+ website. In 2025, the G+ is continuing that effort, supporting the establishment of an offshore wind fabrication collaboration safety forum, which is bringing together leading industry stakeholders in a collaborative, constructive effort to promote safety in the fabrication of offshore wind components.

Analysis of injuries

The majority of incidents resulting in an injury that were reported to the G+ in 2024 resulted in a first-aid case, with 66 % of all injuries being classified as such. This is similar to the proportion seen in 2023, 69 %.

The proportion of lost work day cases increased slightly in 2024, reaching 15% of all injuries, compared to 12 % in 2023. Medical treatment cases represented a slightly smaller proportion of incidents at 11%, compared to 13% in 2023, while restricted work day cases were slightly higher at 8% compared to 6% in the previous year.

As already mentioned, there was one fatality reported in 2024 and one in 2023.

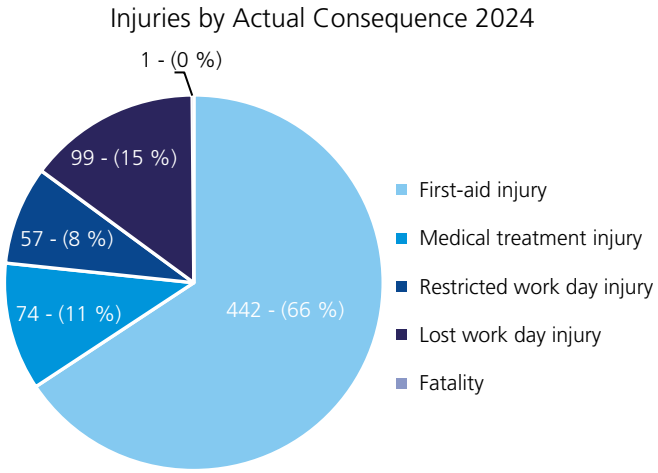

Figure 3: Incidents that resulted in an injury, by actual consequence (2024)

In the next sections of the report we will analyse in detail the lost work day cases and fatality, incidents that resulted in emergency response of medical evacuation, regardless of actual consequence, and incidents that involved a dropped object.

Lost time injuries

In 2024 there were 99 lost time injuries reported to the G+, of which one was a fatality. Almost all of these occurred in single incidents, apart from two occasions where a single incident led to multiple casualties:

- Two workers were on a scaffolding undertaking disassembly/scrapping works on the rotating bucket of a monopile up-ending hinge. The part of the rotating bucket that the two workers were disassembling fell down uncontrolled. It dropped through the scaffolding, causing it to partially collapse. The two workers fell during the collapse, one fatally, the other with injuries requiring hospitalisation.
- Case of a carbon monoxide exposure aboard a crew transfer vessel (CTV). Following an alert from the carbon monoxide alarm (at 200 ppm), the vessel took precautions to lower levels (reaching 100 ppm), but decided to return to shore. Most aboard were impacted, with three lost work day injuries.

For this section of the report, the Energy Institute and G+ Data Deep Dive group reviewed the descriptions for these 99 cases, considering body part injured and the nature of the injury and reflected on the incident severity. The G+ has not yet introduced these reporting categories into its programme; they are being introduced for 2025 reporting. This work was therefore only conducted on the incident descriptions provided by the reporting companies, with clarification sought when appropriate. The classification attributed was reviewed by the data experts from among the G+ members, but this section should be seen as preliminary analysis and a work in progress for the full reporting to be done in the future.

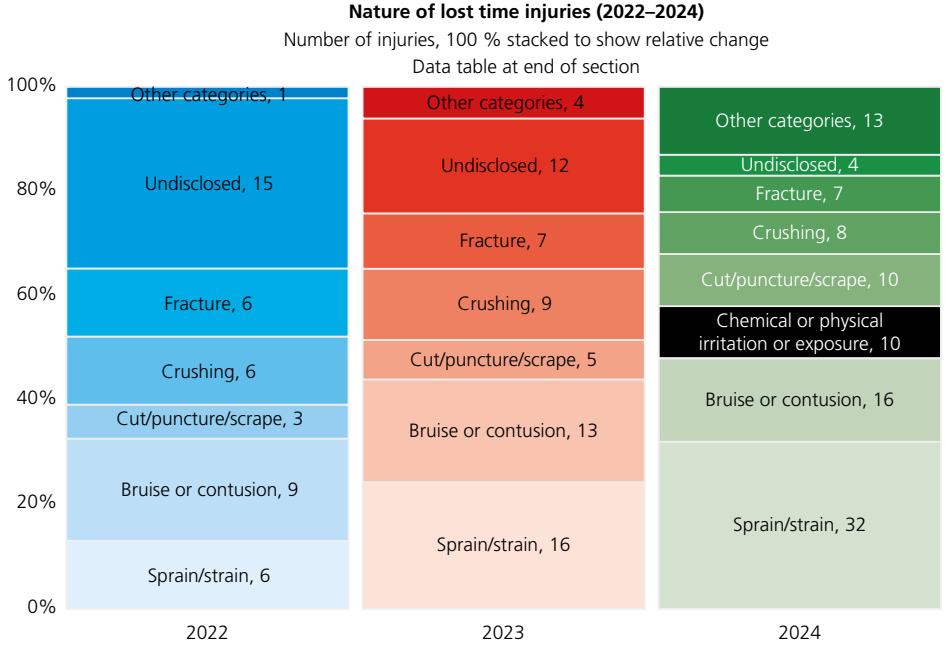

Figure 4: Nature of lost time injuries (2022-2024)

Roughly a third of cases (32 injuries) that resulted in lost time were related to sprains or strains. This type of injury evokes manual handling type tasks[2], and this was the case for 14 of these injuries, affecting either the back/neck or the shoulder/arm. There were also a couple of cases in this category where technicians sprained their backs while climbing ladders. This type of sprain injury similarly resulted from slips or falls at the same height, mostly affecting the feet or ankle (12 cases) and a couple of injuries to either a hand or arm. Slips or falls at the same height are also the cause of most fractures reported (four out of seven).

In the judgment of the incident reviewers, all these incidents of sprains and strains represent the realistic, most severe outcome for the incident scenario, with one exception where a load rolled from the forks of a telehandler. In moving out of the way an operative fell and suffered ligament damage to their knee. Had the load hit the operative, this incident could have had more severe consequences.

The second most common type of injury consisted of 16 cases of soft tissue bruises/contusions. Trips and falls are again the primary type of scenario leading to these injuries, as well as incidents where the injured person hit equipment while walking/moving (e.g. hitting their elbow on a structure). Bruises and contusions can also result from the type of incidentsscenarios that can have more severe outcomes (such as crushing, cuts

[2] G+ has had numerous workstreams on manual handling, for example the case study on reducing manual handling and ergonomics related injuries and disorders (2020), the Safe by Design workshop on material handling equipment (2024), and the recent innovation challenge that explored solutions to avoid bolt handling during tower installation (report forthcoming). Together with SafetyOn, the G+ is finishing materials for a campaign on this topic, videos and other resources to be publishing in the coming months. .

and puncture injuries), for example injuries as a result of tool handling, and digits being caught in equipment, doors/hatches, tensioned lines (e.g. mooring), or pinched in between large nuts and bolts.

Injuries as a result of 'chemical or physical irritation or exposure' were particularly significant in 2024 as there were no lost work-day case (LWDC) in this category in the two previous years. These ten injuries also tended to have a greater potential for more severe consequences, for example the two incidents where the respiratory organs were affected (four injuries). Injuries as a resut of chemical or physical irritation or exposure included:

- One incident on a vessel of carbon monoxide exposure resulting in 3 LWDC (already described).
- One incident with both an eye injury and respiratory consequences, when a fire extinguisher released the ABC powder unexpectedly, the respiratory consequences determined the severity.
- Five other eye injuries, including three as a result of blade repair (grinding or painting/blasting) and an injury due to grout released at pressure during grouting on the TP annulus.
- One chemical burn to a foot during cleaning activities related to catering.

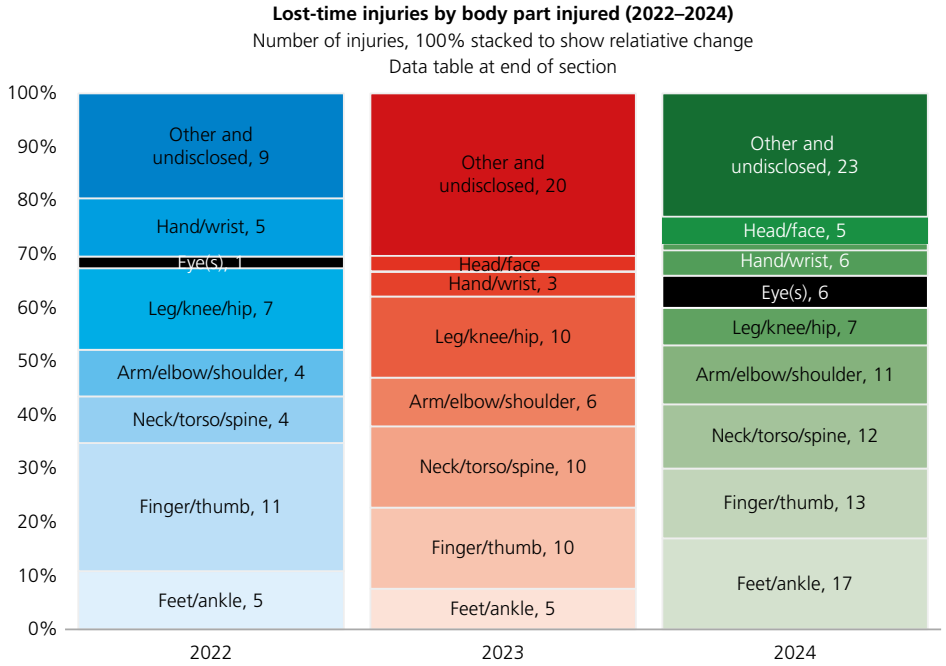

Figure 5: Lost time injuries by body part injured (2022-2024)

Overall, when reflecting on the severity of the 99 injuries, the data reviewers considered that in 71 of the cases it was unlikely that a significantly more severe outcome could have been realised even in slightly different circumstances. These were mostly the incidents resulting in sprains/strains, relatively minor bruising or cuts, and upper/lower limb injuries due to slips or falls at same height. In nine cases the data reviewers considered the injury to be severe, including:

- The fatal event already described (one fatality, one LWDC).
- A fall through a scaffold opening covered only in plastic.
- A thumb amputation (thumb caught between a mobile elevated working platform and a tower section).
- A skipper stepping on a grapnel hook that went through the work boot and fully through his foot.
- A gangway operator's foot being caught by the telescopic gangway.
- A hand injury requiring surgery after a davit crane spring recoiled when the injured person was holding it.
- The grouting related eye injury already described.
- A fall from the termination level to the hang-off level inside a WTG.

In the remainder of the cases the data reviewers felt the incident scenario was outside the more common patterns seen with less severe cases. Although the actual injury was not particularly severe, the reviewers felt that under different circumstances it could have resulted in more severe outcomes, including, for example, the already mentioned cases of carbon monoxide exposure aboard a vessel and the knee ligament damage when a load rolled from a forklift. There were two cases with too little information in the incident description to make a judgement.

The G+ is introducing these reporting elements (body part injures and nature of injury) formally into the data programme for 2025, with members asked to report against these categories, in an effort to better identify, understand and prevent the types of incidents that lead to long-term injury, permanent impairment and fatalities.

Table 4: Breakdown of lost time injuries 2022-2024

Number of lost time injuries by the nature of injury

= number of injuries reported, % = percentage of yearly total, sorted by 2024 values

	2022		2023		2024	
Nature of injury	#	%	#	%	#	%
Sprain/strain	6	13	16	24	32	32
Bruise or contusion	9	20	13	20	16	16
Chemical or physical irritation or exposure	0	n/a	0	n/a	10	10
Cut/puncture/scrape	3	7	5	8	10	10
Crushing	6	13	9	14	8	8
Fracture	6	13	7	11	7	7
Undisclosed	15	33	12	18	3	3
Other categories	1	2	4	6	13	13
Total	46		66		99	

Number of lost time injuries by the body part injured

= number of injuries reported, % = percentage of yearly total, sorted by 2024 values

	2022		2023		2024	
Body part injured	#	%	#	%	#	%
Feet/ankle	5	11	5	8	17	17
Finger/thumb	11	24	10	15	13	13
Neck/torso/spine	4	9	10	15	12	12
Arm/elbow/shoulder	4	9	6	9	11	11
Leg/knee/hip	7	15	10	15	7	7
Eye(s)	1	2	0	n/a	6	6
Hand/wrist	5	11	3	5	6	6
Head/face	0	n/a	2	3	5	5
Other body parts	3	7	8	15	15	15
Undisclosed	6	13	12	18	7	7
Total	46		66		99	

Injuries resulting in emergency response and medical evacuation

In 2024, 7 % (48) of all injuries resulted in an emergency response or medical evacuation (ERME), higher than in 2023, when 6 % (30 incidents) were classified as ERME. There was also an increase in the number of ERME incidents per million work hours, with this figure rising 26 % from 0,48 in 2023 to 0,61 in 2024.

Breaking down incidents that involved ERME, there were seven first-aid cases, up 133 % from 2023; however, these were largely due to a multiple casualty incident with a more severe injury that triggered the ERME. There were four medical treatment cases, down 20% from 2023. Three incidents resulted in restricted work day cases, down 40 % from 2023; and 33 incidents resulted in lost work day injury, up 106 % from 2023. The rise in ERME incidents related to lost work day cases is notable, as is the fact that a third of all lost work day cases that occurred in 2024, 33 out of 99, required ERME. This fatal event which we recorded this year was also classified as ERME

In terms of work processes, the process with the highest number of ERME incidents in 2024 was working with hand tools/power tools, with seven incidents, accounting for 15 % of all ERME incidents. This work process saw a sharp rise from 2023, where only one hand tools/power tools ERME incident occurred. Working at heights (five incidents), walking from A to B (four incidents), and routine maintenance (four incidents) also accounted for a significant proportion of 2024 ERME work processes. Together, these work processes account for 42% of all ERME incidents, with the remainder being spread out across 18 other work processes.

Looking at incident areas, the two areas with the highest number of ERME incidents in 2024 are jack-up vessels/barges and service operation vessels (SOV), both with six incidents each. This is an increase from two incidents in jack-up vessels/barges and four incidents in SOVs in 2023. CTVs also stand out, with five incidents, up from one incident in 2023. The remaining 31 incidents were spread over 14 incident areas.

27 %, 13 out of 48, of ERME incidents were classified as high potential, higher than the 2024 high potential injury average of 8%, although significantly lower than the 2023, where 43 %,13 out of 30, ERME incidents were classified as high potential. Looking at incident areas, three incidents were recorded inside a WTG foundation, and two incidents were recorded each for both jack-up vessel/barge and onshore harbour, quay, and pontoons. With regards to work processes, three incidents occurred during working at heights, and two occurred while working with chemicals and hazardous substances. For these high potential ERME incidents, over half, seven incidents, resulted in a lost work day injury, and one resulted in a fatality.

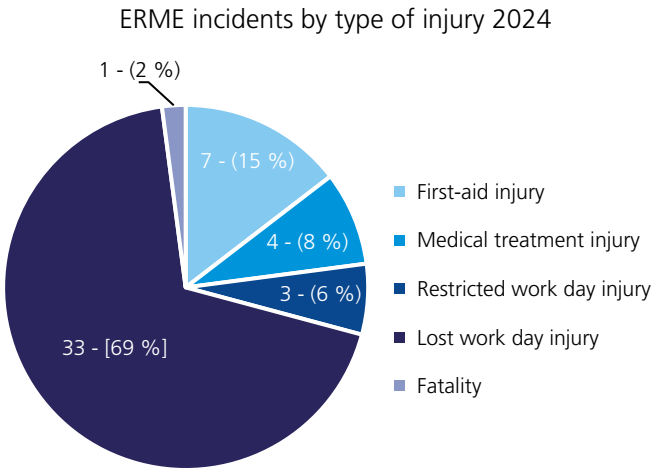

Figure 6: Incidents resulting in emergency response or medical evacuation (ERME) by type of injury consequence, 2024

Injuries as a result of dropped objects

Over the course of 2024, 28 dropped object related injuries were reported, representing 4 % the total injuries. Both these figures are higher than the ones seen in 2023, when 12 dropped object related injuries were reported, 2 % of the total. This increase is also seen in dropped object injuries per million hours, 0,36 in 2024, up from 0,19 in 2023.

In terms of actual consequence, first-aid cases are the most common injury severity resulting from a dropped object incident: if a dropped object resulted in an injury, half of those were first-aid cases, this was even more so in 2023 when the proportion was 75 %. Therefore, over 2024, a larger number of incidents resulted in more serious consequences: 21 % resulted in a medical treatment case in 2024, compared to 8 % in the previous year; 7 % resulted in a restricted work day case, compared to none in the previous year; and 18 % resulted in a lost work day injury, compared to 17 % in the previous year. This year's fatality was classified as a dropped object incident.

The top-five work processes that stand out as being the largest sources of dropped object related injuries are grouting, with six incidents, onshore civils works (including excavations), with five incidents, working at heights, with four incidents, working with hand tools/power tools, also with four incidents, and manual handling, with three incidents. These five work processes accounted for 79% of all dropped object related injuries, with the remaining six incidents being spread over six different work processes. Grouting is a notable work process on this list, as unlike any of the other top five work processes, it did not have any dropped object incidents in 2023.

Looking at incident areas, jack-up vessels/barges accounted for over a third of all dropped object related injuries (10 incidents). This figure is five times larger than that of the previous year, where two incidents were reported. Onshore civils works and turbine tower areas also stand out, with four incidents each, up from one onshore civils works incident and no turbine tower incidents in 2023.

Finally, five incidents in 2024 were classified as ERME incidents, up from only one in 2023.

Injuries by incident area

The jack-up vessels/barges incident area accounted for 14% of all injuries, 92 incidents in total. See section 'Deep dive - incident area: jack-up vessel/barge' for a full breakdown of incidents in this area.

The other incident areas where most injuries occurred in 2024 were: turbine nacelle, with 55 incidents, up 2 % from 54 in 2023; onshore civils works, with 50 incidents, up 138 % from 21 in 2023; CTVs, with 50 incidents, up 108 % from 24 in 2023; and SOVs, with 44 incidents, down 30 % from 63 in 2023. Together, these incident areas, along with jack-up vessels/barges, account for 43 % of all incidents experienced in 2024. The substantial drop in SOV incidents over 2024 is notable, as SOV incidents have previously seen a fairly consistent rise each year since 2019, with a particularly sharp rise in 2023, where incidents more than doubled, from 28 incidents in 2022 to 63 in 2023.

Other incident areas that saw increases in the number of injuries this year were: survey vessels, which rose 150% to 30 incidents, from 12 in 2023; cables installation vessels, which rose 108 % to 25 incidents, from 12 in 2023; onshore warehouse/workshop, which rose 100 % to 24 incidents, from 12 in 2023; and turbine hub and blades, which rose 109 % to 23 incidents, from 11 in 2023. Two areas that stand out as having decreases over 2024 are onshore turbine assembly, which fell 35 % to 17 incidents, from 26 in 2023, and offshore substation non-high voltage (HV) areas, which fell 15 % to 17 incidents, from 20 in 2023.

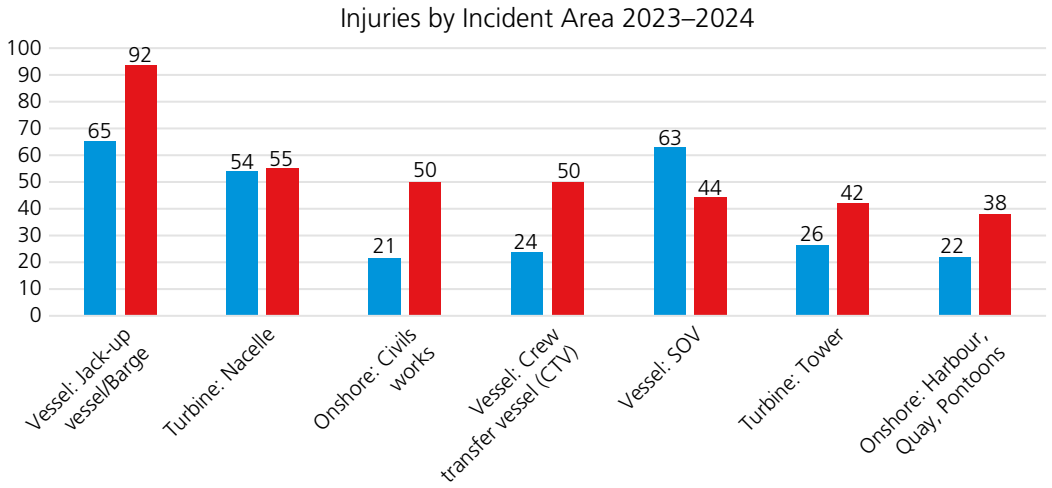

Figure 7: Injuries by reported work area (top seven), 2023 and 2024

Injuries by work process

During 2024, one work process stands out as resulting in the most injuries: manual handling, with 121 incidents, up 26 % from 2023's 96 incidents. Interestingly, for both 2023 and 2024, manual handing is the largest work process, and in both years it accounted for 18 % of the total. Manual handling has consistently been the work process resulting in the highest number of injuries for every year that we have been recording data, so it is not surprising to see it be the largest this year. Note that the lifting work process ranks similarly high if including for events that result in asset damage only (see next section); this is seen in the historical data also.

The G+ has had numerous workstreams on manual handling, for example the case study on reducing manual handling and ergonomics-related injuries and disorders (2020), the Safe by Design workshop on material handling equipment (2024), and the recent innovation challenge that explored solutions to avoid bolt handling during tower installation (report forthcoming). Together with SafetyOn, the G+ is finishing materials for a campaign on this topic, videos and other resources to be publishing in the coming months.

The remaining top-five work processes for 2024 are: walking from A to B, with 70 incidents, up 30 % from 54 in 2023; working with hand tools/power tools, with 67 incidents, down 12 % from 76 in 2023; access/egress, with 40 incidents, up 5 % from 38 in 2023; and routine maintenance, with 37 incidents, up 37 % from 27 in 2023. Working with hand tools/power tools is interesting, as it is one of only two major work processes (work processes with more than 10 incidents in 2024) to have seen a decline in 2024. The other, vessel operations, saw a sharper decline of 32 %, from 28 incidents in 2023 to 19 in 2024.

Elsewhere, civils works onshore (including excavations) more than doubled, rising by 182% from 11 incidents in 2022 to 31 incidents in 2023[3]. Working with electrical systems also saw a rise, increasing 111 % from nine incidents in 2023 to 19 incidents in 2024, as did catering/cleaning, rising 94% from 16 in 2023 to 31 in 2024.

[3] The G+ and SafetyOn have previously published a good practice guidance on *Contractor engagement and behavioural safety in onshore civils*, available to download from the G+ website.

In terms of high potential incidents, the two work processes that stand out are working from heights and grouting, with seven and six incidents respectively. These work processes have a large proportion of high potential incidents, with 47 % and 50% of all working from heights and grouting incidents being high potential. In contrast, only 2% of manual handing and 3 % of walking from A to B incidents were classified as high potential, and there were no high potential incidents this year for working with hand tools/power tools.

Elsewhere, working with electrical systems had five high potential incidents, consisting of 26 % of all electrical system incidents, and transfer to and from vessels had four incidents, consisting of 14 %.

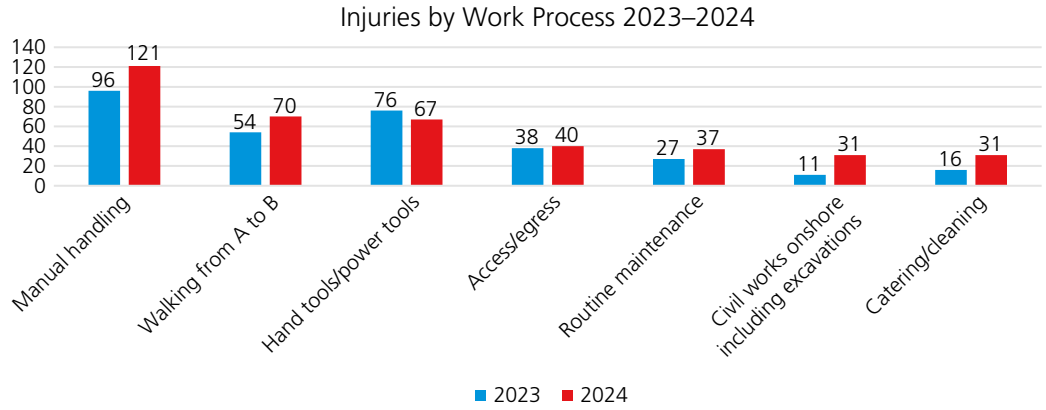

Figure 8: Incidents reported by work process (top five), 2024

Injuries by site type

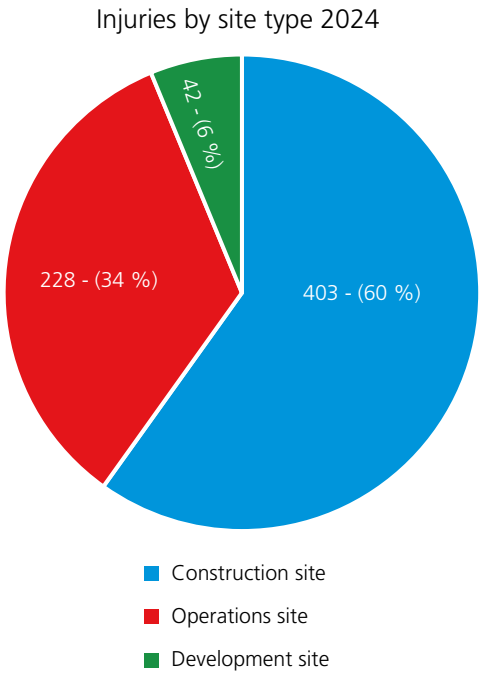

Figure 9: Incidents by site type, 2024

No hours or incidents were reported as decommissioning in 2024.

Over the course of the year in 2024, 78.8 million work hours were reported, up 27 % from 2023's 61.9 million hours. Broken down by site type, we see that, much like 2023, the site type with the largest number of hours was construction sites, with 48 million hours, 61 % of the total. This is an increase of 19 % compared to the previous year, where 40.2 million hours were from construction sites. This is followed by operation sites, with 17.5 million hours, 22 % of the total, an increase of 33 % compared to the 13.2 million hours seen in 2023. Finally, development sites saw the sharpest rise in hours compared to 2023, rising to 13.3 million hours, 17 % of the total, and an increase of 56 % against 2023's 8.5 million development site work hours.

Looking at incidents, we see that 2024 saw a 24 % increase from the previous year, rising to 673 from 543 in 2023. Breaking down by site type, construction site incidents rose by 18 %, from 341 in 2023 to 403 in 2024. Operation sites incidents saw a slightly larger rise of 30 %, from 176 to 228. However, the sharpest rise in incidents was seen in development sites, where incidents increased by three quarters, rising 75 % from 24 in 2023 to 42 in 2024. There is a dedicated section of this report on development sites. See section 'Deep dive - development site incidents' for a full breakdown of the patterns in this site type.

Offshore wind farms projects are either in the development, construction, operation or decommissioning phases. These are defined as:

Development site: Development and consenting phase of the project. Site area has been awarded by the landowner and surveys are being undertaken for consenting and pre-construction

Construction/project site: Construction and commissioning are being undertaken

Operation site: The site is in operation and producing power (Note: WTGs will often be commissioned and handed over to operations. as soon as they are built. In the case where a site has both project and operational activities, the incident has been evaluated to determine what activity was performed and classified accordingly.)

Decommissioning: The offshore wind farm has stopped operating, and work is underway to remove the wind farm

When examining key metrics, we see that construction site safety performance has remained broadly steady between 2023 and 2024, with a slight increase of 2 % in LTIF, from 0,92 to 0,94, and another slight increase of 3 % in TRIR, from 2,46 to 2,54. Operations sites saw a rise between 2023 and 2024, being 32 % for LTIF, from 2,12 to 2,79, and 12 % for TRIR, rising from 4,77 to 5,36. The sharpest rise seen this year is the rise in development site LTIF, which more than tripled, rising 283 % from 0,12 in 2023 to 0,45 in 2024. A rise of over a third was seen in TRIR, rising 37 % from 0,83 to 1,13.

Table 5: LTIF and TRIR by site type 2023-2024

	Site type	2023	2024	Change
LTIF	Construction site	0,92	0,94	2 %
	Operations site	2,12	2,79	32 %
	Development site	0,12	0,45	283 %
TRIR	Construction site	2,46	2,54	3 %
	Operations site	4,77	5,36	12 %
	Development site	0,83	1,13	37 %

Injuries by country

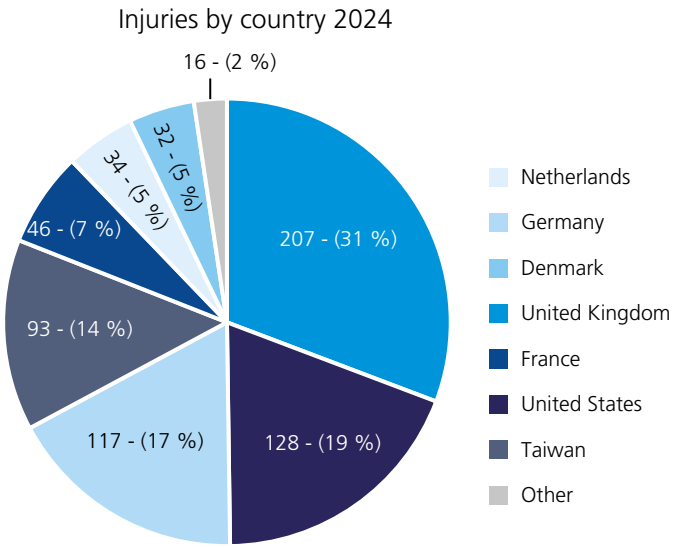

Figure 10: Injuries reported per country, 2024

In 2024, there was been a change in the composition of countries reporting injuries. Much like 2023, the country with the highest number of incidents is the United Kingdom (UK), with 207 incidents, 34 % higher than the 2023 value of 155. The United States and Germany, the second largest and third largest sources of injuries in 2024, both saw substantial increases, rising 83 % and 89 %, from 70 and 62 in 2023 to 128 and 117 in 2024. Taiwan, the fourth largest country for 2024, saw the opposite pattern, with injuries declining 15% from 110 to 93. Elsewhere, the remaining countries with more than ten injuries reported were: France, 46 injuries, down from 53 in 2023; the Netherlands, 34 injuries, up from 28 in 2023; and Denmark, 32 injuries, down from 44 in 2023. The remaining ten countries, which had less than ten incidents, accounted for 16 incidents in total.

Moving on to hours, we see that the UK has a large number of work hours this year, more than double the number of hours of the next largest country. The UK reached 29.8 million hours in 2024, 53 % higher than this same value for 2023, 19.5 million hours. Taiwan, by contrast, saw hours decline, falling by 26% from 16.8 million hours to 12.4 million hours.

Two countries that stand out for their increase in work hours are the United States, where work hours increased by 84 % from 7.1 million to 13 million, and Germany, where hours more than doubled, rising from 4.5 million to 9.3 million. Elsewhere, France had 4.9 million hours, up 6 % from 4.6 in 2023: the Netherlands had 1.3 million hours, down 45% from 2.4 in 2023: and Denmark had 1.8 million hours, down 33 % from 2.7 in 2023.

Looking at the key metrics, a few key points stand out. Firstly, in Taiwan both TRIR and LTIF increased, with TRIR rising by 40 % and LTIF rising by 36%. The Netherlands and Demark also saw large increases in TRIR and LTIF, with both these metrics more than doubling in the Netherlands, and Denmark seeing TRIR more than double and LTIF rising by almost three quarters. By contrast, in Germany TRIR fell by 26 % and LTIF by 18 %. Elsewhere, the picture was more mixed, with the UK's key metrics being broadly steady, France seeing an increase in TRIR but a fall in LTIF, and the US seeing TRIR remaining broadly steady while also seeing a sharp increase in LTIF.

Table 6: LTIF and TRIR by country 2023-2024				
	Country	**2023**	**2024**	**Change**
LTIF	United Kingdom	1,23	1,34	9 %
	Taiwan	0,24	0,32	36 %
	United States	0,43	0,69	63 %
	Germany	2,90	2,37	–18 %
	France	2,39	1,85	–23 %
	Netherlands	0,84	2,28	172 %
	Denmark	2,25	3,93	74 %
TRIR	United Kingdom	2,92	2,72	–7 %
	Taiwan	1,85	2,59	40 %
	United States	2,27	2,39	6 %
	Germany	5,36	3,98	–26 %
	France	3,04	3,49	15 %
	Netherlands	2,93	6,08	107 %
	Denmark	4,51	9,55	112 %

High potentials

In this section we analyse the entire dataset for 2024 and 2023, looking at all injuries, reports of asset damage, near miss incidents and hazard observations that were classified as having high potential. We use the term 'high potentials' to refer to these collectively.

During 2024, 12 % of the entire dataset (of all injures, plus asset damage, near hit/miss and hazard reports) was classified as high potential, 245 unique instances. This is 34 % higher than the value in 2023, 183, which was 11 % of the total dataset that year.

Breaking down by site type, construction sites saw the highest rise in the number of high potentials, 154, up 47% from 105 in 2023. This is followed by operation sites, with 81 high potentials, up 21% from 67; and development sites, with 10 high potentials in both 2023 and 2024. Both construction and operation sites had the same proportion of high potentials, 13%, while development sites had 6% of its reports classified as such.

Examining work processes, lifting operations tops the list, with 44 high potentials reported, representing 18 % of the total in that work process, up 10% from 2023, which saw 40 lifting operation high potentials. Both routine maintenance and working with electrical systems had the same value for 2024, with 22 high potentials, coincidentally, both doubling from 11 high potentials in 2023. High potentials represented a greater proportion (29%) of all working with electrical systems incidents and hazard observations; this was only 12% for routine maintenance. Elsewhere, an unusually high proportion (33%, 14 cases) of working at heights incidents and hazard observations were classified as high potential. Nearly half of grouting incidents and hazard observations, seven of the 15, were classified as high potential. Manual handling, by contrast, had an unusually low proportion, at just 6%, eight cases out of 140 incidents and hazard observations.

Looking at the top-five incident areas for high potentials reported, we see that jack-up vessels/barges stands out, with 37 high potentials in 2024, more than double the 2023 figure of 18. The remaining top-five areas are: CTVs, with 28 high potentials, up from 22 in 2023; turbine transition piece/boat landing with 21 high potentials, up from ten in 2023; SOVs with 16 high potentials, up from 12 in 2023; and turbine nacelle with 14 high potentials, up from 13 in 2023. CTVs and turbine transition piece/boat landing are also notable from having a higher proportion of high potentials, at 17% and 21% respectively, while jack-up vessels/barges, SOVs, and turbine nacelle all have a slightly lower proportion at 13 %, 10 %, and 10 % respectively.

Breaking down the actual consequences of high potentials: 41 hazards were classified as high potential, up 32 % from 2023; 113 near hit/miss incidents, up 36 %; 38 reports of asset damage, up 31 %; 20 first-aid cases, up 5%; seven medical treatment cases, up 133 %; seven restricted work day cases, up 250 %; and 18 lost work day cases, up 20 %.

7 % of incidents tagged as high potentials resulted in an ERME, 17 in total, up 31 % from 2023's 13. 27 % of 2024's high potentials were also classified as a dropped object, 67 in total, up 20 % from the value in 2023, which was 56.

Reports of asset damage

Throughout 2024, there were 375 reports of asset damage on our members sites, a decline of 4 % compared to 2023, where 390 reports of asset damage occurred. Breaking down by site type, we see a slight decline in construction site reports, which fell 8% from 2023, and now account for 71 % of the total, compared to 75 % in 2023. We also see a major decline in operation site reports, which fell by 37 % from the previous year, and now account for 14% of the total, compared to 21 % last year. In contrast, asset damage reported from development sites more than tripled, rising 229 % from 2023, and now accounting for 15 % of the total, compared to 4 % in 2023. This increase in development site asset damage reports also tracks with the overall increase in development site incidents – for more information, please see our Deep dive - development site incidents section.

For asset damage reports, lifting operations stands out as the largest work process, with 95 reports, up 17 % from 2023 and accounting for 25 % of all asset damage reports. This pattern is not dissimilar to the one seen in 2023, where lifting operations was also the largest source of asset damage reports, accounting for 21 % of the total. The second largest work process by asset damage reports in 2024 was surveying, which saw a substantial rise from 2023, increasing 179 %, from 19 reports to 53. This is associated with the increase in development site incidents, as surveying is a major development site activity – indeed, 81 % of all surveying asset damage reports occurred on development sites, often cases of equipment lost to sea. Elsewhere, vessel operation asset damage reports saw a major decrease, falling 40 % from 73 in 2023 to 44 in 2024. Transit by vessel also saw a sharp decline, more than halving from 27 in 2023 to 13 in 2024.

Looking at incident area, the top-four incident areas in 2024 were all vessel type incident areas. These areas were: jack-up vessels/barges, with 81 reports, accounting for 22 % of the total, and seeing an increase of 5% from 2023; survey vessels, with 49 reports, accounting for 13 % of the total and seeing an increase of 48 % from 2023; SOVs, with 38 reports, accounting for 10 % of the total and seeing a decrease of 22 % from 2023; and CTVs, with 31 reports, accounting for 8 % of the total, and remaining unchanged from 2023. Together, these incident areas account for over half, 53 %, of all asset damage reports.

15 % of all asset damage reports were classified as involving a dropped object, far higher than the dropped object proportion of all incidents for 2024, which is 4 %. Indeed, there were more dropped object asset damage reports, 56, than there were dropped object incidents, 28. Furthermore, there was a higher proportion of dropped object asset damage reports in 2024 than in 2023, where this proportion was 9%.

10 % of asset damage reports in 2024 were considered high potential, slightly higher that the same figure in 2023, 7 %, as well as slightly higher than the 2024 injury average of 8 %. Looking at these high potential asset damage reports, we see that working with electrical systems stands out, with six reports being high potential out of a total number of asset damage reports of 13. In terms of incident area, offshore substation (non-HV zones) also stands out, with seven of the 14 asset damage reports being classified as high potential.

Three asset damage reports in 2024 required the activation of ERME systems, compared to one asset damage report in 2023.

Hazards and near misses

During 2024, there were 919 hazard and near hit/misses reported, accounting for 47 % of the 1,967 reports that we received. This 2024 figure is 23 % higher than the number of hazards and near hit/misses reported over 2023, 745, accounting for 44 % of all reports that year.

Overall, the number of hazards and near hit/misses traces closely with the number of injuries reported for a work area. However, a few work processes stand out as having a high proportion of hazards and near hit/misses. Almost all (19) of the 20 reports for the communication work process in 2024 were hazards and near hit/misses. For routine maintenance, 65 % of all reports were hazards and near hit/misses, compared to 56% in lifting operation. In contrast, only 10% of manual handling reports were classified as a hazard or a near hit/miss, as were only 11% of walking from A to B reports and 13% of working with hand tools/power tools reports.

Looking at incident areas, a significant number of areas had 51 % of all reports classified as being hazards and near hit/misses; for CTVs, SOVs, WTG nacelle and harbour, quay, and pontoons, 51 % of all reports were classified as hazards or near hit/misses. In contrast, 39 % of jack-up vessels/barge, 36 % of onshore civils works and 40 % of survey vessel reports were classified as hazards or near hit/misses.

Of the 919 hazards and near hit/misses, 154 were classified as high potential. Looking into these reports, we see that jack-up vessels/barges are the incident area with the highest number of high potential hazards and near hit/misses, with 22 reports, accounting for 20 % of all hazards and near hit/misses in this area. This is followed by WTG transition piece/boat landing, with 16 high potential hazards and near hit/misses, 28 % of all hazards and near hit/misses in this area, and CTVs, with 14 high potential hazards and near hit/misses, 16 % of all hazards and near hit/misses in this area. In terms of work process, lifting operations had the highest number of high potential hazards and near hit/misses, with 33 reports, 21 % of all hazards and near hit/misses for this process, followed by routine maintenance, with 16 reports, accounting for 14 %, and vessel operations, with 12 reports, accounting for 22 %.

Deep dive - Injuries on jack-up vessels/barges

In 2020, only 5 % of incidents resulting in an injury were reported as occurring on a jack-up vessel/barge; this has been increasing and reached 14 % in 2024, where there were 92 incidents resulting in an injury aboard a jack-up vessel/barge. Most of these incidents, 85, occurred on construction sites. The remaining seven incidents occurred on operation sites.

Two work processes stand out as having the largest number of incidents of these 92 incidents, together accounting for 38%: manual handling, 19 incidents, up from 13 in 2023; and working with hand tools/power tools, 16 incidents, up 10 in 2023. Elsewhere, the work process with the third highest number of incidents was grouting, with nine incidents, a major increase from last year, where the number of grouting incidents was only one. Civils works offshore (including trenching) and catering/cleaning were work processes that had no incidents in 2023, while in 2024, they had six and four incidents, respectively.

When conducting a comparison by country, we see that most countries saw substantial increases in jack-up vessel/barge incidents. Incidents in the United Kingdom doubled, from 11 in 2023 to 22 in 2024; incidents in the United States rose from 13 in 2023 to 20 in 2024; and incidents in France rose from 11 in 2023 to 20 in 2024. However, by far the steepest rise was seen in Germany, where 15 incidents were recorded in 2024, up from one in 2023. In contrast, incidents in Taiwan saw a decline, from 25 incidents in 2023 to 13 incidents in 2024, and both the Netherlands and Denmark saw incidents fall from two in 2023 to one in 2024.

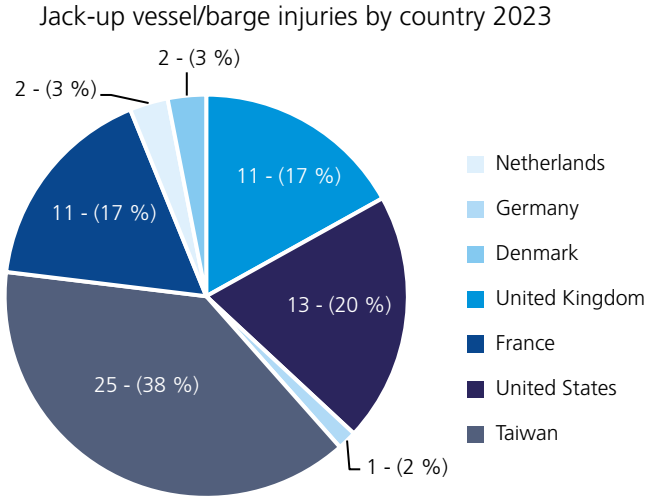

Figure 11: Incidents in work areas 'jack-up vessel/barge', per country, 2023

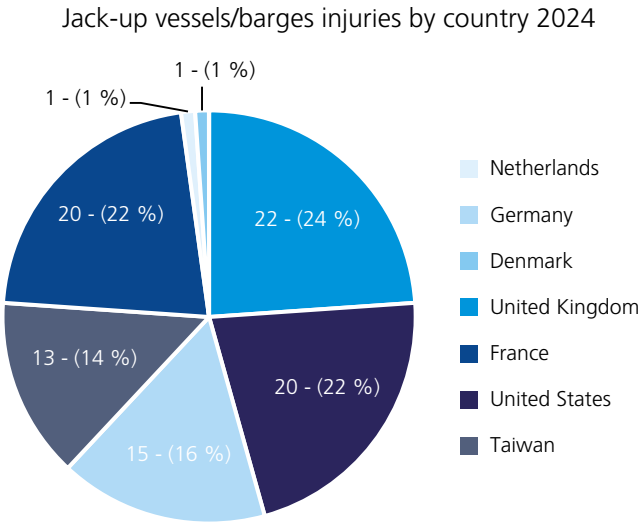

Figure 12: Incidents in work area 'jack-up vessels/barges', per country, 2024

Looking at actual consequences, less severe injuries saw modest rises, with first-aid injuries increasing 13 % to 63 incidents. More severe injuries saw more substantial rises, with all of these categories more than doubling; medical treatment injuries rose from five incidents in 2023 to 13 incidents in 2024; restricted work day injuries rose from one incident in 2023 to five in 2024: and lost work day injuries rose from three incidents in 2023 to 11 incidents in 2024.

During 2024, there were 81 reports of asset damage on jack-up vessels/barges, a 5 % increase from the 77 incidents seen in 2023. Looking into the work processes of this asset damage, we see that over half, 56 %, occurred during lifting operations, 45 asset damage reports. This is more than double the figure from 2023, where 22 lifting operation asset damage reports occurred on jack-up vessels/barges. There were also 13 asset damage reports during vessel operations, down 35% from 2023, and 6 asset damage reports during operating plant and machinery, down 40 % from 2023.

Eight incidents, 9 % of all jack-up vessel/barge incidents, were considered high potential, more than the 2023 proportion of 8 %. Looking at these high potential incidents, we see that six of these incidents were due to grouting, one was due to working at heights, and one was due to catering/cleaning. Six jack-up vessel/barge incidents resulted in an emergency response or a medical evacuation, compared to one in 2023.

Deep dive - Walk to work systems

For this section, the G+ data analysis and Deep-Dive team examined the entire dataset for 2023 and 2024 researching looking for cases related to walk-to-work systems. As such, this section of report analysis includes all actual consequences categories: injuries, asset damage, near hit/misses, and hazard observations.

In 2024, there were 46 unique instances in our database that involved walk-to-work systems, up from 41 in 2023. Most (76 %) occurred in construction sites, while the remaining (24 %) occurred in operation sites. This is a similar pattern to 2023, where 80% of cases occurred on construction sites, 15% on operations sites, and 5 % on development sites.

When examining the descriptions of each of these cases, a few patterns emerge. A large proportion of cases involving a walk-to-work system occurred during connection and disconnection, with an unexpected disconnection frequently appearing in descriptions. 15 cases in 2024 occurred during connection/disconnection, down from 20 recorded in 2023. A less pronounced trend is vessels experiencing an unexpected swell (four in 2024, two in 2023).

For both 2024 and 2023, four work processes were the most prevalent, with transfer from/to vessel predictably topping the list, with 17 in 2024, up from 15 in 2023. Operating plant and machinery had eight instances, which was the same number as in 2023; lifting operations, seven, an increase from just one in 2023; and vessel operations, had four cases in 2024, down from nine in 2023. These four work processes accounted for 78% of all cases involving walk-to-work systems in 2024, and 80 % in 2023.

Looking at incident area, two incident areas stand out for both 2024 and 2023: SOVs, with 24 cases, down from 29 in 2023, and jack-up vessels/barges, with seven cases, up from four in 2023. As walk-to-work systems are always attached to vessels, this pattern is to be expected. These two incident areas accounted for 67 % of all walk-to-work reports in 2024, and 80 % in 2023.

Looking at the actual consequences of cases where walk to work systems were involved, we see six hazard observations reported in 2024, down 25% from 2023; 13 near hit/miss incidents, up 8% from 2023; 23 reports of asset damage, up 28 % from 2023; two first-aid cases, up from none in 2023. No cases resulted in medical treatment, down from one in 2023; and two cases resulted in lost work day(s), unchanged from 2023. When examining these actual consequences as proportions, we notice that instances where walk-to-work systems were involved have a larger proportion resulting in asset damage than the 2024 average, with half of walk-to-work cases in 2024 resulting in asset damage, compared to 19 % of asset damage reports in the 2024 dataset.

In both years, only one of the cases identified as involving walk-to-work systems resulted in an emergency response or evacuation. Six cases were considered high potential, the same figure as 2023, with four of these occurring on an SOV. Four cases involved dropped object incidents, down from five in 2023.

Deep dive - Development sites

In 2024, injuries on development sites rose by 75 %, from 24 in 2023 to 42 in 2024. This represents the highest rise in incidents development sites since 2020. The proportion of injuries on development sites also rose, from 4 % of the total in 2023 to 6 % in 2023; as did the rate of incidents resulting in an injury, from 2,83 to 3,17 incidents per million hours, a 12 % rise. However, overall work hours also saw a substantial increase, rising from 8,5 in 2023 to 13,3 in 2024, a rise of 56 %.

Looking at work processes, we see that one work process stands out – surveying, which accounts for over a quarter, 26 %, of all injuries on development sites. This is unsurprising, considering a large proportion of activity that occurs on development sites is surveying operations, and this proportion is fairly similar to the one seen in 2023 (33 %). What is unusual is the high number of injuries that occurred during catering/cleaning, office work, and business travel, with seven, six, and three incidents, respectively, higher than the one incident these three work processes each received in 2023.

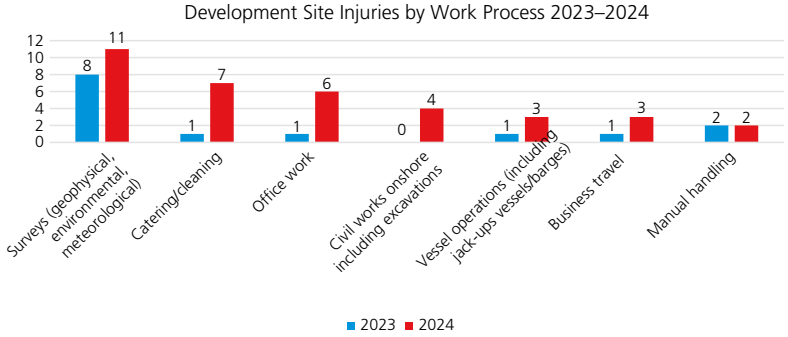

Figure 13: Incidents per work process (top five), development sites, 2023–2024

With regards to incident area, it is not surprising to see that survey vessels top the list in 2024 with half of all incidents, which is a pattern seen in 2023, where survey vessels accounted for 42 % of incidents. This is followed by onshore office and office surroundings, with 24%, higher than the 4% seen last year. This is to be expected, based on the patterns observed in the work processes. The next two most incident-prone work areas for 2024 are onshore civils works, accounting for 12 % of the total, and offshore civils works, accounting for 7% of the total. These work processes are somewhat unexpected, as they typically do not appear on development sites, and are much more frequent on construction sites. Neither of these incident areas had any incidents in 2023.

Looking at injury severity (incident consequence): 64 % of incidents resulted in a first-aid case, down from 71 % in 2023; 14 % of incidents resulted in medical treatment cases, up from 13 % in 2023; 7 % of incidents resulted in restricted work day cases, down from 13 % in 2023; and 14% of incidents resulted in lost work day cases, up from 4 % in 2023.

5 % of injuries on development sites required an emergency response/medical evacuation, compared to the overall 2024 average of 7%. 7 % of development site incidents were classified as high potential, compared to the overall 2024 average of 8 %. The TRIR of development sites was 1,13, while the LTIF was 0,45, lower than the 2024 overall rates of 2,93 for TRIR and 1,27 for LTIF. Overall, development site incidents can be seen as less likely to cause a major injury than incidents from other site types.

Examining asset damage on development sites, we see a substantial increase during 2024, with reports of asset damage more than tripling between 2023 and 2024, rising 229 % from 17 asset damage reports to 56 reports. Looking at both work process and incident area, we see a clear pattern, with 43 reports categorised as incident area: survey vessel and the same 43 categorised as work process: surveying, representing 77 % of all reports of asset damage for development sites. In 2023, there were 10 reports of asset damage that occurred during surveying, and 14 that occurred on survey vessels (i.e. there were four reports of asset damage aboard a survey vessel unrelated to the surveying work process).

Conclusions and next steps

This annual report provides a summary of the key points and themes of 2024, with deep dives into the most significant areas. We see that work hours have shown an increase of 16.9 million; although, rises in TRIR and LTIF reinforce the need for continued vigilance. Jack-up vessels/barges stand out as a work process with regards to incidents. Development sites overall see rises, showing an increase in incidents both in the field and in the office. Walk-to-work system incidents are a notable proportion of incidents for both 2023 and 2024.

Looking ahead to 2025, we are developing our data programme with new severity metrics, adjusting our data collection systems so that we can capture more information that is relevant to our mission. We will also be expanding our support, aiding fabrication and shipyards in their efforts to improve safety performance.

2025 will be the first year that G+ has held its Stakeholder Forum outside of Europe. This reflects the internationalisation of the G+ and we look forward to seeing many of our stakeholders in Korea in September. This year will also be about ensuring that G+ workstreams such as the lifting framework, manual handling videos and transfer methods are fully embedded into sites. As always, it takes the whole offshore wind industry to keep striving to maintain a safe place to work. Because of this, G+ will continue to collaborate with other organisations, like IMCA, to ensure areas like vessel operations continue to improve and develop.

Annex A – Glossary

Throughout the report, some terms are used to mean a group of work processes or incident areas. The definitions of these terms are as follows:

Lifting operations	Lifting operations comprise the following work processes: lifting operations and rigging/slinging/banking. They do not include davit crane lifting operations or cable pull/winching operations.
Operational site	Site in operation producing power.
Construction site	Site under construction and commissioning.
Turbine	The turbine includes internal and external foundations, hub and blades, nacelle, service lift, tower, transition piece/boat landing areas, external and internal foundations, helicopter area and yaw gear space.
Development site	Development and consenting phase of the project.

The following incident consequence definitions have been used in the G+ dataset:

Fatality	An incident that involves death as a result of a work-related incident or occupational illness. Deaths that occur after an incident but are a direct consequence of an incident are to be included.
Hazard	A hazard is a condition or a situation where there is a potential to cause an incident. It is important to remember that nothing has happened, and no impact/harm has occurred. Only hazards that are considered to be high potential are included.
Near hit/near miss	A near hit or near miss is any incident that could have resulted in a work-related accident but did not, either by chance or timely intervention.
First aid	An incident that requires simple treatment that is self-administered or administered by a first aider, doctor or nurse but does not result in lost time or long-term medical care.
Medical treatment	An incident not severe enough to be reported as a fatality, lost work day incident or restricted work day incident, but which is more severe than requiring simple first-aid treatment.
Restricted work day	An incident that does not result in a fatality or a lost work day but does result in a person being unfit for the full performance of the regular job or any work on any day after the occurrence of the occupational injury.
Lost work day	Non-fatal incident that involves a person being unfit to perform any work on any day after the occurrence of the occupational injury. 'Any day' includes rest days, weekend days, leave days, public holidays or days after ceasing employment.
Asset damage	An event where there is damage to plant, equipment or facilities (no injury to persons).
High potential incident	High potential incidents are incidents or near misses that have the potential to cause a fatality/life-changing injury .

The following statistical definitions have been used in the G+ incident data analysis:

Total recordable injury rate (TRIR)	The number of fatalities, lost work day incidents, restricted work day incidents and medical treatment injuries per million hours worked.
Lost time injury frequency (LTIF)	The number of fatalities and lost work day incidents per million hours worked.

The following acronyms have been used in the G+ incident data analysis:

APAC	Asia-Pacific
CTV	crew transfer vessel
ERME	emergency response or medical evacuation
HV	high voltage
IMCA	International Marine Contractors Association
LTIF	lost time injury frequency
LWDC	lost work-day case
OEM	original equipment manufacturers
SOV	service operation vessel
TRIR	total recordable injury rate
WTGs	wind turbine generators

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