

HSE ACCOUNTS for 2017



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At SINTEF, HSE is our highest priority. We make systematic efforts to ensure that our staff benefit from a safe and secure work environment that promotes good health and enables them to take pleasure in their work. We enjoy a climate of cooperation between our staff and management, a factor that plays an important role in creating a positive and healthy work environment.

SINTEF is audited in accordance with three standards: ISO 14001:2015 – Environmental Management Systems; ISO 9001:2015 – Quality Management Systems; and OHSAS 18001:2007 - Occupational Health and Safety Assessment Series. Certification means that SINTEF takes its preparatory and systematic efforts seriously and that the whole organisation offers its clients work of high quality.

The overarching aims of our HSE efforts are as follows:

- SINTEF will provide its employees with a positive work environment that promotes good health
- SINTEF's employees will not need to take work-related sick-leave
- SINTEF's employees will suffer no injuries, accidents or losses
- SINTEF will present a clear environmentally friendly profile

Achievement of HSE goals for 2017:

KPI 2017	Goals	Achievement of goals
Sick-leave	< 3.5%	4.0%
Work-related sick-leave	0%	0,3%
Performance appraisal interviews:	100%	90%
HI – rate of injury-related absence from work (number of personal injuries requiring absence, per million hours worked) ¹⁾	0	1.4
H2 – rate of personal injuries (number of personal injuries per million hours worked) ¹⁾	0	4.3
Rate of absence from work (number of days off work per million hours worked)	0	19.6
Accidents leading to damage to the external environment	0	0
Critical risk potential of events (number of potentially critical events per million hours worked)	0	12.4
Reports from field-work and travel (number per million hours worked)	8	5.5
Reduction in amount of waste by 10%, by 2018, compared with 2016:		under way
Reduction in amount of waste produced by 20%, by 2018, compared with 2016:		under way
Reduction in energy consumption in operation of SINTEF's buildings by 5%, by 2018, compared with 2016:		about 8%
Projects to be carried out with minimum environmental stress		continually

¹⁾ exclusive first aid injuries

Health and work environment

In 2017, SINTEF put a number of structural adaptations into effect, with the aim of further improving our organisation. The most important change was the establishment of SINTEF Industry, a fusion of the Foundation's Institute of Materials and Chemistry, and SINTEF Petroleum Research AS. We also implemented restructuring processes in other institutes. These processes have involved a significant amount of effort over and above our day-to-day activity on the part of management, staff representatives, and the employees involved.

SINTEF carries out a survey of important work environment factors every other year. The aim of the survey is to support the positive development of our work environment, organisation and management. In 2017, we focussed on follow-up and measures to overcome the challenges that emerged in the 2016 survey. Many of our groups are seriously and positively engaged in further developing SINTEF's work environment, while others are finding it a challenge to maintain the pressure and exploit the results of the survey sufficiently well to produce improvements.

Training in HSE is essential to maintain control of our activity in such a way that undesirable events do not occur, and SINTEF has made such training obligatory. In 2017, our e-training course "HSE in laboratories and workshops for

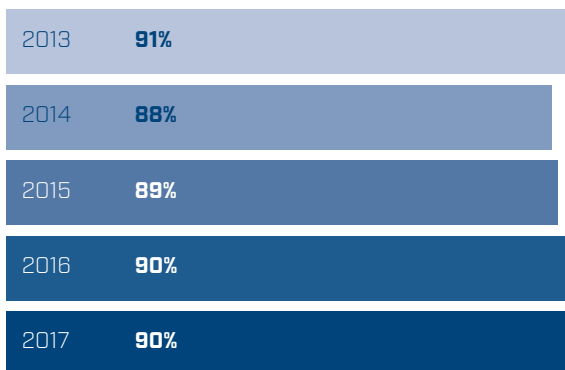
all SINTEF staff" was revised and made compulsory for all of our staff. Regular training courses in laboratory and workshop safety are held in individual institutes.

In order to implement SINTEF's "people-oriented" strategy, in 2017 we designed a common set of procedures at system level for continuing staff training. One of the main aims of this measure was to further improve the quality of our work by encouraging personal development among our staff via positive dialogue and feedback throughout the year. In 2018, our efforts will focus on implementing the programme, the performance appraisal interviews of which are a core component.

Performance appraisal interviews are annual structured conversations between employees and their immediate superiors. They focus on topics such as tasks and aims, the work environment and personal development. Each interview results in a personal action plan which is subsequently followed up. The rate of implementation of the appraisal interviews in 2017 was 90 per cent.

Performance appraisal interviews

(including companies owned by SINTEF Holding)

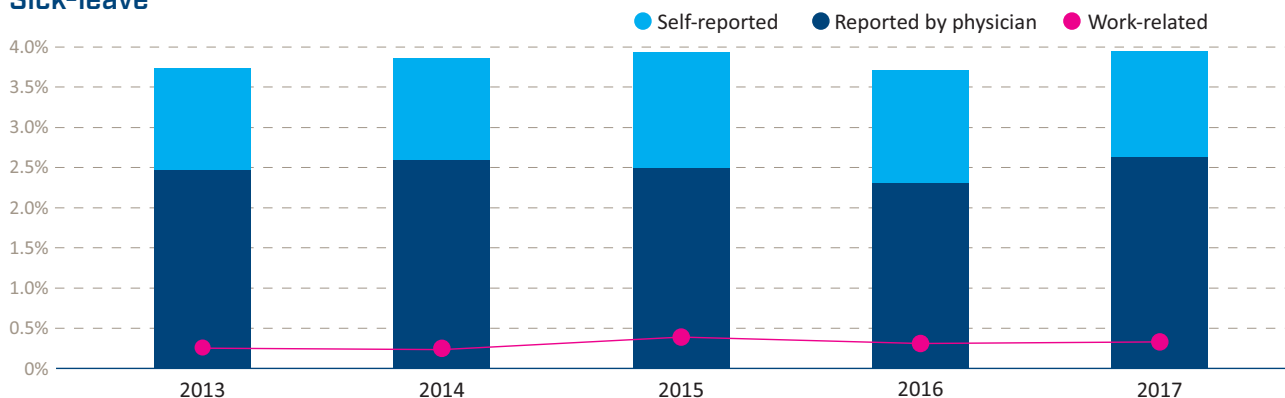


Work-related health issues and sick-leave

Work-related health issues and sick leave are followed up through close contact with the employee involved. The 2017 rate of sick-leave was 4.0 per cent, which is higher than the 3.5 per cent rate that SINTEF aims for. Work-related sick leave ended up at 0.3 per cent. SINTEF is an inclusive work environment company, and work-related and other causes of sick-leave are systematically followed up by our institutes. Sick-leave is kept at a low level through the

implementation of good management principles. SINTEF conducts targeted health interviews with members of staff who are exposed to potential hazardous health conditions in their work environment. Employees are selected for these interviews on the basis of a risk assessment of their exposure situation, and they are carried out every third year for each individual employee. In 2017, 174 targeted health interviews were held.

Sick-leave



Safety

In 2017, SINTEF Group management decided to raise the level of HSE efforts within the organisation. The objective of the exercise was to reduce the number of personal injuries and achieve permanent alterations in behaviour in our laboratories and workshops. A goal-directed programme of improvements within four specific areas will be launched:

- 1) greater efforts will be put into ensuring technical safety;
- 2) managers will play a leading role regarding safety concerns;
- 3) employees must become more aware of the risks and barriers involved in their work;
- 4) employees must accept responsibility for their own role in improving safety.

The HSE upgrade and follow-up plan go further than previously in that they describe the tasks and responsibilities assigned to each role. The project will be implemented throughout the entire organisation, and will be a major effort that will be given high priority in 2018.

Single-page HSE notices are being published with the aim of encouraging good exchanges of experiences within the organisation, and they have already led to greater awareness and learning from undesirable events. The single-page HSE notices are being used in a number of connections – at management meetings, departmental meetings,



work environment committee meetings and external meetings.

SINTEF uses significant quantities of chemicals in the course of its research, and in 2017 we carried out an internal audit of how chemicals are handled by six of our laboratories. The audit demonstrated that the performance of the laboratories was satisfactory and that we operate in accordance with the current regulations.

In collaboration with NTNU, SINTEF has carried out a number of work environment and safety inspections. Managers from both NTNU and SINTEF visited jointly operated laboratories to study HSE and joint operation agreements. The aim of these visits was to develop the existing dialogue between management and staff in order to encourage improvement efforts and develop good common practices.

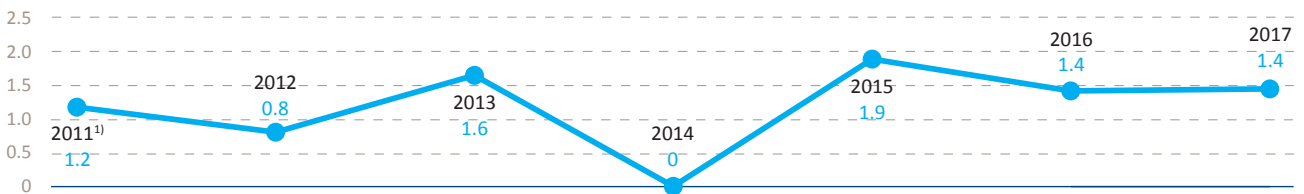
Personal injuries

SINTEF has experienced a negative trend in the number of personal injuries in the course of the past three years, which is not in accordance with our aim of zero personal injuries. Such undesirable events demonstrate that efforts to prevent injuries need to be given high priority, and in 2017 we carried out various investigations, surveys, and analyses with a view to identifying their causes. These efforts led to the decision to improve our performance in

the area of HSE. In 2017, 31 personal injuries were registered, 15 of which required medical treatment, while five resulted in sick-leave being taken, and 16 were registered as first-aid cases. Sick-leave (H1) and personal injury rates (H2) were 1.4 and 4.34 respectively. The corresponding figures for 2016 were 1.4 and 4.8. The rate of sick-leave taken in 2017 was 19.6, and most of the absence was due to a single event.

Frequency of injuries leading to sick-leave being taken (H1 value)

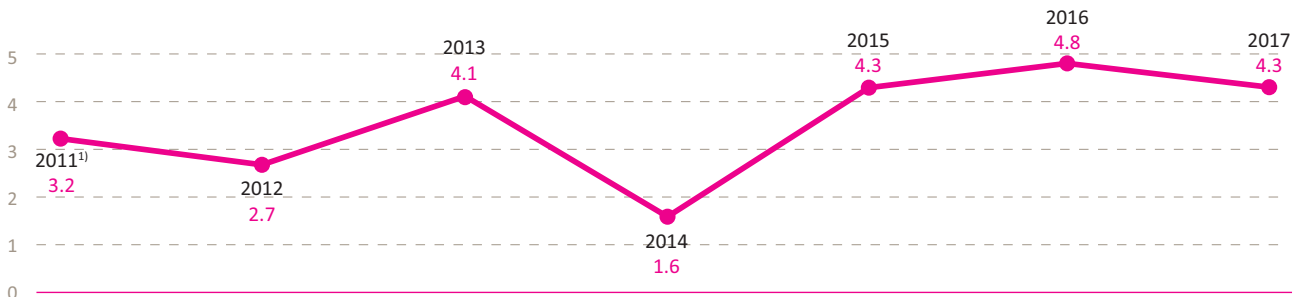
Number of injuries leading to sick-leave, per million hours worked



¹⁾ This figure does not include companies owned by SINTEF Holding

Frequency of personal injuries (H2)

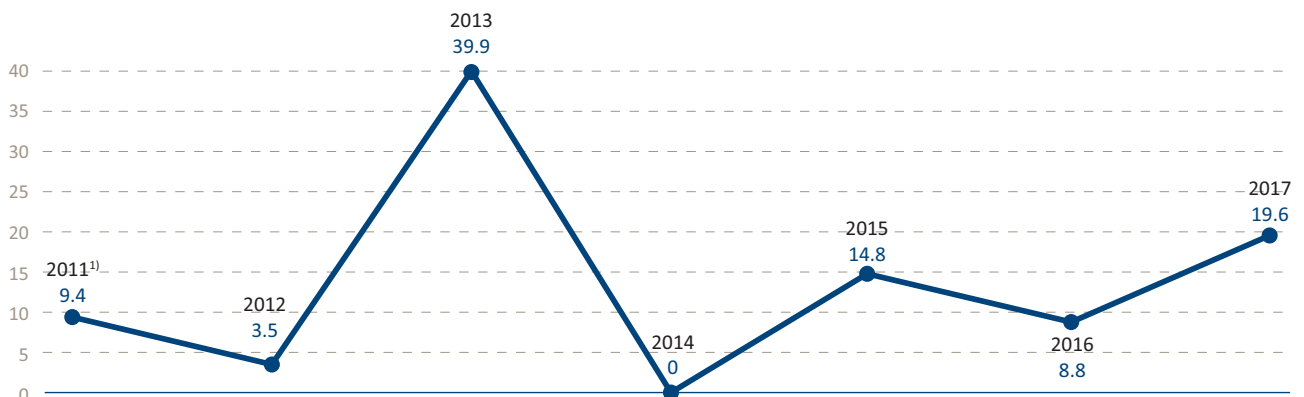
Sum of injuries leading to sick-leave and other injuries (excluding injuries requiring first-aid) per million hours worked.



¹⁾ This figure does not include companies owned by SINTEF Holding

Frequency of absence from work (F-value)

Number of days of absence from work due to injury, per million hours worked.



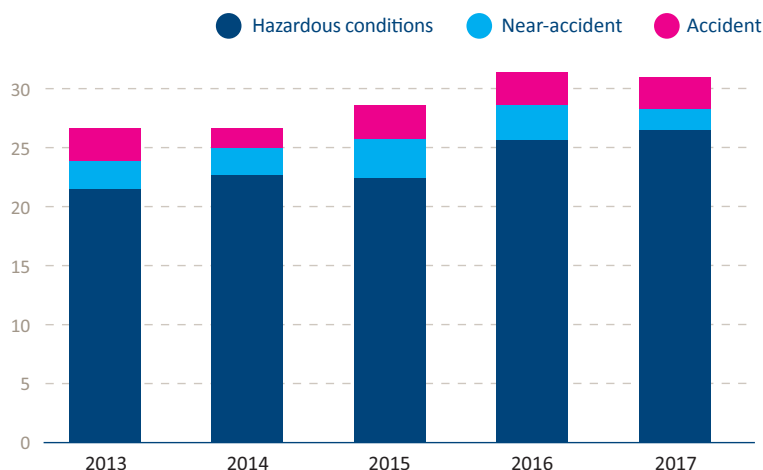
¹⁾ This figure does not include companies owned by SINTEF Holding

HSE reports

In 2017, SINTEF registered 555 HSE reports in its deviation system, 48 of which were accidents and 32 near-accidents, while 475 were reports of hazardous conditions/observations. 43 of the accidents and near-accidents were considered to present a potentially critical risk.

In the spring of 2017, we noted a falling trend in the number of observations and hazardous conditions registered. After SINTEF's group management raised the level of attention it paid to reporting and following up such conditions, a trend in the right direction was evident during the following period.

HSE reports per 100 years worked



Accident: An event that has led to injury (including injuries requiring first-aid), illness and/or damage to/loss of fixed assets, damage to the environment or to a third party.

Near-accident: An event that under slightly different conditions could have led to injury, illness and/or damage to/loss of fixed assets, damage to the environment or to a third party.

Hazardous conditions: Circumstances or conditions that could potentially lead to personal injury, illness and/or damage to or loss of property, damage to the environment or injury to a third party.

Preparedness

In 2017, there were no incidents that were sufficiently serious to require a significant intervention on the part of SINTEF's emergency preparedness organisation.

The number of natural catastrophes and acts of terror that required follow-up by the emergency preparedness organisation was lower than in the previous year. A serious incident on a street in Barcelona in August required our travel agent's emergency-handling team to give SINTEF

staff clearance to travel.

All of our institutes had planned preparedness exercises for 2017, but in two cases these were not carried out until the new year. A contingency planning day was held for group management in August, in which the chosen focus of attention, taken from SINTEF's risk profile, was state intelligence activity and cyber security. An action plan based on the outcomes of the contingency planning day was drawn up.

Physical environment

SINTEF's policy for the physical environment has an impact on how we perform our research. Through its systematic efforts to reduce loads on the environment, SINTEF accepts its environmental responsibilities and meets the expectations of its clients. The latter topic involves helping, via our research, to achieve environmental benefits for these clients.

SINTEF is certified in accordance with ISO 14001, which requires continuous improvements in our activity with regard to the external environment to be made. Environmental considerations must be emphasised in our own operations, in projects and in our deliveries. In 2017, improvements in the methods we employ for performing environmental surveys were implemented.

Our most important contributions to the environment are our international cutting-edge research projects and other activities aimed at exploiting renewable energy resources, performing climate research, and developing environmental technology. We share our efforts with the world by actively communicating our environmental research results and expertise.

In 2017, no reportable incidents that affected the physical environment were reported by SINTEF.

SINTEF has adopted an environmental action plan that includes energy-efficient operation and responsible treatment of waste. A long-term goal for the programme, which will end in 2018, has been set, with the aim of identifying the effects of the measures that have been launched.

SINTEF's HSE Plan for 2018

SINTEF's action plan for 2018 will be based on its overarching HSE goals:

- SINTEF will provide its staff with a good work environment that promotes good health
- SINTEF will have a zero rate of work-related sick-leave
- SINTEF will have a zero rate of injuries, accidents and losses
- SINTEF will maintain a clearly defined environmental profile.

KPI Objectives	Measures implemented
<ul style="list-style-type: none"> • Performance appraisal interviews = 100% • Sick-leave <3.5% • Work-related sick-leave = 0% • H1 – rate of injury-related absence from work (number of personal injuries requiring absence, per million hours worked) = 0 ¹⁾ • H2 – rate of personal injuries (number of personal injuries per million hours worked) = 0 ¹⁾ • Rate of absence from work (number of days off work per million hours worked) = 0 • Critical risk potential of events (number of potentially critical events per million hours worked) = 0 • Accidents leading to damage to the external environment = 0 	<ul style="list-style-type: none"> • Implement new systems for personal development of staff • Perform and follow up work environment survey • Launch measures to reduce sick-leave rates • Make special efforts in the HSE upgrade in the following areas: <ul style="list-style-type: none"> - Technical safety - Safety management - Risks and prevention-oriented approach - Employee acceptance of own fields of responsibility
<ul style="list-style-type: none"> • Reduce amount of waste by 10% by 2018, compared with 2016 • Reduce amount of produced waste by 20% by 2018, compared to 2016 • Reduction in energy consumption in operation of SINTEF's buildings by 5% by 2018, compared to 2016 • Projects to be carried out with minimum stress on the environment • Reduce staff travel 	<ul style="list-style-type: none"> • Improve reporting of incidents from field-work and travel • Carry out joint HSE assessments and safety rounds with NTNU • Implement and improve control of project risks • Profile environmental contributions from project deliveries • Follow-up of ISO certification audit • Audit environmental action plan

¹⁾ exclusive first aid injuries



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