BASIC POLICY ON PROMOTION OF SMART INDUSTRIAL SAFETY

1. UNDERLYING IDEAS ON PROMOTION OF SMART INDUSTRIAL SAFETY

a. The industrial and energy infrastructures – including oil, chemical, electricity, and gas – are required to take measures against structural challenges and major changes in their surrounding environments. These include deterioration of facilities, aging and continuously insufficient human resources, and decline in transmission capabilities of technologies and techniques, as well as intensifying disaster and terror risks and the advent of a digital society equipped with new technologies. In addition, it is necessary to ensure the business continuity of these infrastructures as they face pandemic risks, as demonstrated by COVID-19.

b. In order to tackle these problems, it is expected of the enterprises to further enhance their industrial safety and productivity, through methods including introducing new technologies enhancing safety and/or supplementing manual labor, and creative ideas and attempts at the frontline. For example, a facility may employ data-driven status monitoring technologies to enhance safety as well as alleviate the issue of insufficient human resources and reinforce its efficiency and competency. This particular example can be seen as part of a shift towards a data-driven society (Society 5.0).

c. Furthermore, the Ministry of Economy, Trade and Industry (METI) has been playing roles in strengthening industrial safety, through demonstration experiments of new technologies, including Internet of Things (IoT) and artificial intelligence (AI), into safety operations, as well as regulatory reforms promoting the utilization of such technologies. With technological innovation expected to intensify in the coming years, it is vital to accelerate businesses in using these new technologies and thereby further enhance the safety and competitiveness of the companies. This can be achieved by continuously reexamining safety regulations and systems to encompass technological advancements.

d. With the background above in consideration, the higher echelons of the public and private sectors hereby jointly establish the *Public-Private Council on Smart Industrial Safety* (hereinafter referred to as "the Council"). The Council will serve as a collaborative effort between the two sectors to roundly promote *Smart Industrial Safety*[*], an autonomous and progressive effort regarding industrial safety among changing environments, including technological innovation, digitalization, low birthrate, and aging. The Council will clarify the basic policies of Smart Industrial Safety and disseminate its importance and the direction of related actions. With these ideas as a common foundation, the government will promote advanced endeavors of businesses, as well as proactively and effectively reexamine safety regulations and systems. These efforts would, by means of Smart Industrial Safety, further enhance safety, and strengthen the enterprises' autonomous safety capabilities, and ultimately

contribute to higher productivity and competitiveness of related industries, and the safety and security of the citizenry.

(*) SMART INDUSTRIAL SAFETY

Smart Industrial Safety is

1. An autonomous and independent effort regarding industrial safety by the public and private sectors,
2. From the perspective of appropriate implementation of industrial safety regulations, promotion of the industries, and strengthening of competitiveness,
3. In order to deal with economic and social structural changes, including rapid technological innovation, digitalization, low birthrate and aging population, and population decline,
4. Considering the safety of the citizenry and the industry as a priority.

In detail, the term refers to

1. Ensuring the safety and security of the citizenry throughout the future by constantly reexamining regulations and systems,
2. As well as continuously promoting the enhancement of autonomous safety capabilities and the improvement of productivity of business and industrial frontlines,
3. By pursuing safety and efficiency in terms of industrial safety through introducing new technologies enhancing safety and efficiency, including IoT and AI, and creative ideas and attempts, and facilitation of operations at the frontline,
4. With neutral and fair judgment based on scientific evidences backed by sufficient information and data.

2. SPECIFIC ACTIONS TOWARDS PROMOTION OF SMART INDUSTRIAL SAFETY

a. Actions by the Council

(1) Formulating the Basic Policy

(a) The Council shall recognize the importance of Smart Industrial Safety and formulate its basic policy in order to facilitate its actions based on joint efforts between the public and private sectors.

(2) Formulating and Promoting Action Plans

(a) In order to promote Smart Industrial Safety, the public and private sectors should aptly recognize environmental changes including technological innovations, share information on recent circumstances, and accelerate their actions in a comprehensive and detailed manner.

(b) To achieve this goal, the Council shall formulate detailed action plans for the public and private sectors on Smart Industrial Safety. The action plans shall encompass introduction of new relevant technologies, and reexamination of regulations related to its promotion.

(c) Committees shall be established under the Council, divided by industrial sectors (e.g. electric safety, high-pressure gas safety). The formulation processes of action plans shall be carried out by the committees, considering the situations of each sector. The committees shall report their respective action plans to the Council, avoiding inter-sectoral discrepancies.

(d) The action plans shall be reviewed and, if necessary, promptly revised by the committees.

b. Efforts on Smart Industrial Safety from Private Sectors. Enterprises shall autonomously promote efforts on Smart Industrial Safety, in accordance with technological innovations and digitalization. These efforts include development, testing, and introduction of new technologies, and fostering human resources.

(1) Development, Testing, and Introduction of New Technologies, e.g. IoT and AI.

(a) Enterprises shall promote advanced actions on development, testing, and introduction of new technologies. Examples include utilizing drones for patrol, and monitoring and anomaly detection using IoT and AI.

(2) Fostering Human Resources Supporting Smart Industrial Safety

(a) In order to overcome aging and lack of safety personnel and support Smart Industrial Safety in the mid- to long term, human resources familiar with the frontline situations and new technologies are necessary.

(b) Therefore, enterprises shall continually put efforts on fostering human resources supporting Smart Industrial Safety. This shall promote creative frontline endeavors and improve operations efficiency, as well as facilitate frontline application of new technologies, e.g. IoT and AI.

c. Efforts on Smart Industrial Safety from Public Sectors. The government shall continually reexamine safety regulations and organize and support systems to promote Smart Industrial Safety. Ensuring safety shall be the prerequisite of such actions.

(1) Flexible Reexamination of Regulations and Systems in Response to Technological Innovations

(a) The government shall promote the realization of Smart Industrial Safety by flexibly reexamining regulations and systems in response to technological innovations, e.g. IoT and AI.

(b) During such efforts, the government shall also take into consideration the appropriate ways to ensure the reliability of new technologies, as well as methods to improve social acceptability. Accurate evaluation of new technologies and apt reflection on regulations and systems are required.

(c) As its key effort, the government shall conduct an extensive evaluation of regulations and systems regarding safety inspections in electricity and high-pressure gas sectors. The government shall evaluate whether any regulations are acting as a hindrance against implementation of new technologies, within the year 2020. Upon this evaluation, the government shall reexamine regulations and systems where deemed necessary.

(2) Supporting Efforts from Private Sectors

(a) The government shall take supportive actions on private sectors in their efforts related to Smart Industrial Safety. These include development, testing, and introduction of new technologies, and fostering human resources supporting Smart Industrial Safety.

(3) Publicizing and Disseminating Smart Industrial Safety (e.g. hosting symposiums or organizing official commendations)

(a) The government shall facilitate understanding of the effects on safety and efficiency by Smart Industrial Safety, thereby promoting and accelerating investment in Smart Industrial Safety. Methods include publicizing advanced cases of Smart Industrial Safety.

(b) In detail, the government shall host *Smart Industrial Safety Symposiums* (name tentative) to proactively publicize advanced cases and ongoing efforts of Smart Industrial Safety, domestic and overseas, and facilitate understanding from wide spectrums of the citizenry.

(c) Additionally, the government shall award *Infrastructure Maintenance Awards* (as METI minister awards) to distinguished enterprises, thereby shining light upon the frontrunners in advanced Smart Industrial Safety and facilitating innovations in Smart Industrial Safety technologies.

3. <u>FOLLOW-UP ON EFFORTS</u>

a. The Council shall conduct yearly follow-ups on Smart Industrial Safety efforts by the public and private sectors and, if necessary, revise the basic policy etc.