Promotion of CCS

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Last year in Japan most focus has been given on the big earthquake in east Japan and the accident of Fukushima Daiichi nuclear plant. It however does not necessarily mean that seriousness of global warming faded out. At COP 17 held in South Africa last December the target of keeping the global temperature rise within 2 or 1.5 degrees was clearly declared. We notice that achievement of this target is a hard task, as factors accelerating emission of CO_2 rather than those reducing it have been increasing. The key factor is economic development of developing countries but another important factor is the barrier set to nuclear expansion since the accident of Fukushima Daiichi. The government of Japan does not make any decision on future energy strategy yet, but often expresses its will of relaxing reliance on nuclear power. It is therefore almost certain that nuclear power will shrink in future in a considerable degree. Although renewables have been promoted all over the world, their development will be limited by several barriers such as present high costs and output variability. Under these conditions we also notice that a new positive factor appeared in the situation of fossil fuels of which resource finiteness has been worried for long; the increase in availability of unconventional gases such as shale gas in the United States.

Taking all these situations into consideration we foresee that fossil fuels will still keep the position of principal actor in energy supply at least for next several decades. Limiting CO_2 emission under these conditions inescapably lead us to use of CCS. However we notice there are a few but serious barriers to development of CCS. The first is the high cost and/or energy required of CO_2 removal, and the second is low public acceptance particularly in Europe where most environmental groups and/or local governments are not in favor of underground storage of carbon oxide. Taking into account that carbon dioxide is, different from ordinary pollutants, harmless and there are many underground sites where carbon dioxide is naturally stored, we may say that CCS is a technology to be safely implemented in practice. We should therefore do a lot of efforts for improving public acceptance of CCS.

Our institute RITE has investigated recovery technology, storing technology and evaluation of safety of CCS and therefore is proud of standing at the top of CCS research in the world. We will do more efforts for developing technologies for mitigating global warming, particularly those of CCS and therefore ask the readers to support our institute conducting R&D along this direction.