

The preparation of industrial groundwater consumption plan in central region with multi-stakeholder participation

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The industrial groundwater consumption plan in central region was prepared to identify the guidelines, strategies and measures in water management with multi-stakeholder participation. The projects supporting promotional development framework that is non-redundant to the government project were also prepared base on the “sufficiency economy” as the guided philosophy. The concept is to be self-reliant in solving problems by managing the demand according to the 3Rs (Reduce, Reuse and Recycle) principle as well as identify the guideline in expanding area and improving the water storage and distribution system in each area.

This study has located the 14 provincial target areas in central region of Thailand which are Bangkok, Kanchanaburi, Chainat, Nakhon Pathom, Nonthaburi, Pathumthani, Phra Nakhon Si Ayutthaya, Ratchaburi, Lopburi, Samut Prakan, Samut Sakhon, Saraburi, Singburi and Ang Thong. The water balance was assessed under the conditions of GPP increasing in the area in four scenarios of: business as usual (BAU), 3%, 5% and 7%; along with the multi-stakeholder hearing in each area. The SWOT analysis was applied to the assessment results to identify the strategies and measures in water management. It was found that in the year 2021 under the scenario of 7% increases in GPP of all 13 provinces (except Samut Prakan), there is risk in overall water scarcity and the top five areas with the highest risk are Phra Nakhon Si Ayutthaya, Saraburi, Kanchanaburi, Pathum Thani and Lopburi with the assessed scarcity level of 11.27, 7.37, 2.69, 1.46 and 0.80 million m³/year, respectively. The strategies were prepared to support the water demand from area expansion covering four dimensions of demand, supply, logistic and management (DSL&M) which are strategy 1: water consumption efficiently, strategy 2: establishment of the security of water quantity and water services system, strategy 3: water quality management and strategy 4: development of mechanism and supporting tools in water management.

Keywords: groundwater management plan, water balance, industrial water demand, multi-stakeholder hearing