

Abstract Submitted  
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**World spherical torus (ST) research as coordinated by the IEA ST Implementing Agreement (IA)**<sup>1</sup> Y.-K.M. PENG, ORNL, Y. TAKASE, U. Tokyo, Japan, B. LLOYD, CCFE, UK — Since the establishment of the IEA ST IA in 2007, the world ST research community has grown to 24 ST experiments in seven countries. For the second 5 years of the IA, major upgrades of the NSTX (USA) and MAST (UK) are or will soon be underway aiming to start enhanced experimental research in 2015. Major tests of solenoid-free start-up are addressed by experiments in Japan including QUEST (Kyushu U.), TST-2 (U. Tokyo), and LATE (Kyoto U.), Pegasus (U. Wisconsin), and SUNIST (Tsinghua U., PRC). These aim to develop database to minimize/remove the central solenoid and enable truly compact fusion energy devices. Lithium-only PFCs are tested in LTX (PPPL). The community is considering low to modest-Q applications to fusion energy R&D. These range from small size (R~0.5m) volume neutron sources delivering several MW fusion neutrons, to medium size (R~1.0m, 50-MW) fusion science and technology experimental facilities to enable critical R&D needed to develop database for a fusion DEMO and other energy applications. Progress and remaining ST R&D will be summarized.

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