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Overview of the JET ITER-like Wall, First Results and Scientific Programme GUY MATTHEWS, JET-EFDA, Culham Science Centre, Abingdon, OX14 3DB, UK, JET-EFDA COLLABORATION — The ITER-like Wall (ILW) is the first integrated tokamak experiment with a beryllium main chamber wall and tungsten divertor as foreseen for the activated operational phase of ITER: The ILW will study plasma-wall interaction (PWI) processes (material erosion, material mixing etc.), and the compatibility of the ITER materials with low fuel retention and high power operation. Replacement of the JET CFC first wall by solid Be limiters, and a combination of bulk W and W-coated CFC divertor tiles was performed by remote handling and completed in May 2011 in parallel with a neutral beam heating upgrade to 35MW and enhancement of diagnostic capabilities. Mitigation of the power and energy loads in the divertor to acceptable levels at high power plasma performance will require high-density plasmas and radiative cooling via impurity seeding. Experiments were carried out with the carbon wall in preparation for the ILW to operate plasmas within ILW limits and provide reference plasmas for key physics studies. Although first plasma is scheduled for mid-August, the scientific programme in support of ITER will start earlier with machine conditioning. In this paper, an overview of the ILW, first results and the outlook for the scientific programme will be presented.

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