Run title	-->	L-Mode DEMO
PROCESS Version	-->	1.0.16
Date:	-->	07/08/2019
Time:	-->	09:35
User:	-->	apearce
Optimising:	-->	Plasma major radius

Plasma composition:
Number densities relative to electron density:

D + T	= 0.8931
He	= 0.05221
Xe	= 1e-08
W	= 5e-05

Colour Legend:
ITR
OP

Geometry:

R_0	= 17.54 m
a	= 5.658 m
A	= 3.1
κ_{95}	= 1.65
δ_{95}	= 0.3333
Surface area	= 5462 m^2
Plasma volume	= 1.863e+04 m^3
No. of TF coils	= 16
inboard blanket+shield	= 1.055 m
ouboard blanket+shield	= 1.782 m
Fusion power	= 2741 MW

Physics:

I_p	= 38.81 MA
Vacuum B_T at R_0	= 5.916 T
q_{95}	= 3.5
β_N, thermal	= 0.6247 % m T MA^{-1}
β_N, total	= 0.697 % m T MA^{-1}
β_P, thermal	= 0.2851
β_P, total	= 0.318
$< t_e >$	= 6.767 keV
$< n_e >$	= 3.455e+19 m^{-3}
$< n_{e,\,line} > / n_G$	= 1.194
$T_{e0} / < T_e >$	= 2.45
$n_{e0} / < n_{e,\,vol} >$	= 2
Z_{eff}	= 1.225
$n_Z / < n_{e,\,vol} >$	= 5.001e-05
τ_e	= 6.919 s
H-factor	= 1.13
Scaling law	= ITER-96P

Coil currents etc:

PF 1	= 21.95 MA
PF 3	= -13.89 MA
PF 5	= -7.983 MA
Startup flux swing	= 1485 Wb
Available flux swing	= -1922 Wb
Burn time	= 2 hrs

TF coil type is WST Nb3Sn

Peak field at conductor (w. rip.)	= 13.04 T
I/I_{crit}	= 0.6019
TF Temperature margin	=ERROR! Var missing
CS Temperature margin	= 4.948 K
Conduit Von Mises stress	= 4.868e+08 Pa
Case Von Mises stress	= 5.8e+08 Pa
Allowable stress	= 5.8e+08 Pa
Mass per TF coil	= 1.096e+07 kg

Power flows:

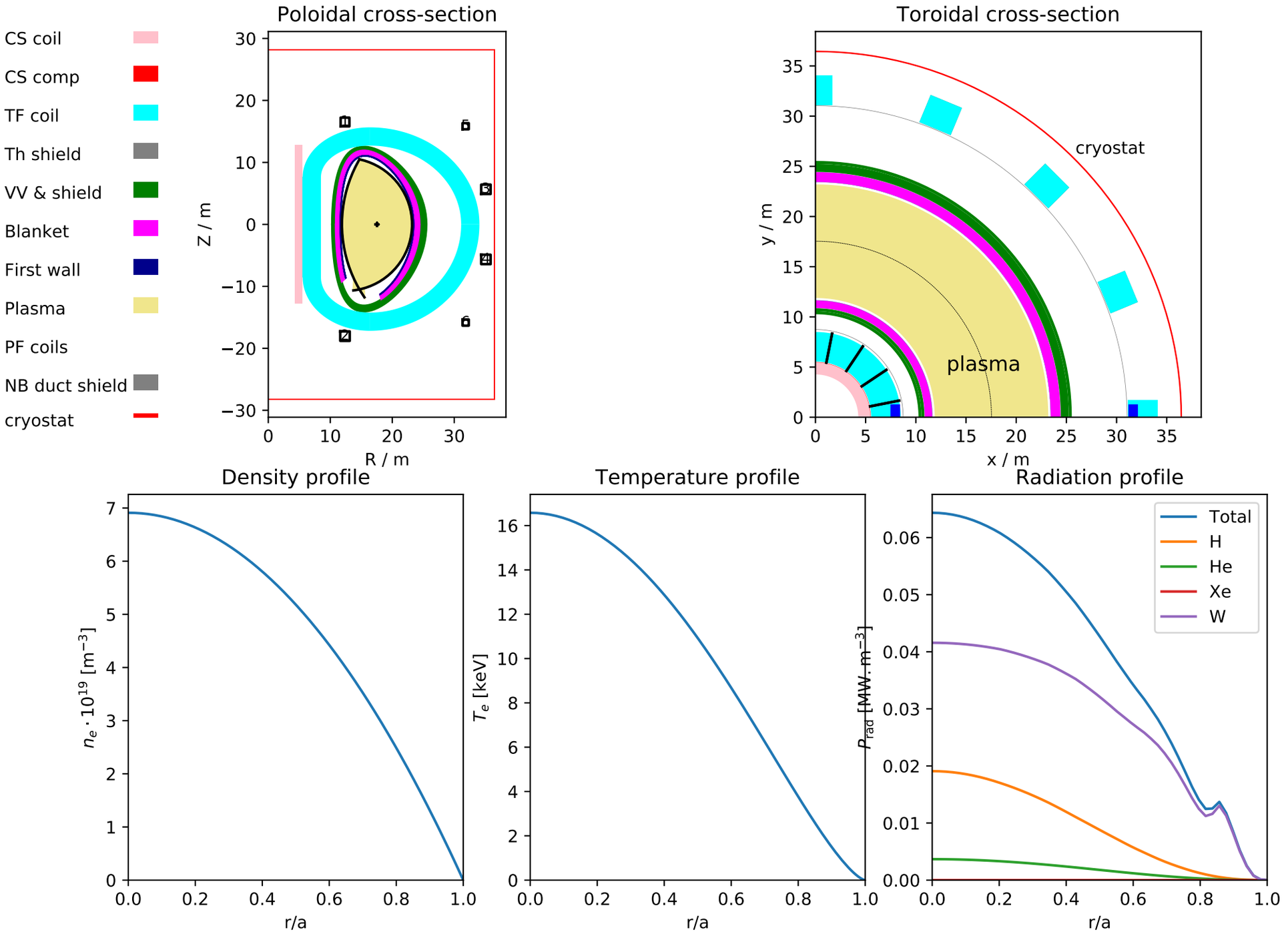
Nominal neutron wall load	= 0.3691 MW m^{-2}
Normalised radius of 'core' region	= 0.75
No pedestal model used	
Helium fraction	= 0.05221
Core radiation	= 167.4 MW
Total radiation	= 289.5 MW
Nuclear heating in blanket	= 1607 MW
Nuclear heating in shield	= 4.75 MW
Power to divertor	= 295.9 MW
H-mode threshold	= 295.9 MW
Divertor life	= 3.569 years
Primary (high grade) heat	= 3598 MW
Gross cycle efficiency	= 37.5 %
Net cycle efficiency	= 31.55 %
Gross electric power	= 1349 MW
Net electric power	= 500 MW
Fusion-to-electric efficiency $\frac{P_{e,\,net}}{P_{fus}}$	= 18.24 %

Electron Cyclotron Current Drive:

Steady state auxiliary power	= 61.45 MW
Power for heating only	= 0.001 MW
Bootstrap fraction	= 0.1279
Auxiliary fraction	= 0.07838
Inductive fraction	= 0.7937
Plasma heating used for H factor	= 418 MW
$\frac{P_{div}}{R_0}$	= 16.87 MW m^{-1}
$\frac{P_{div}}{< n > R_0}$	= 48.83 $\times 10^{-20}$ MW m^2
$\frac{P_{div}}{P_{LH}}$	= 1
H* (non-rad. corr.)	= 0.9986

Costs

Cost of electricity	=ERROR! Var missing


CS coil
CS comp
TF coil
Th shield
VV & shield
Blanket
First wall
Plasma
PF coils
NB duct shield
cryostat
Poloidal cross-section
Z / m
R / m
Toroidal cross-section
cryostat
plasma
y / m
x / m
Density profile
$n_e \cdot 10^{19}$ [m^{-3}]
r/a
Temperature profile
T_e [keV]
r/a
Radiation profile
P_{rad} [MW.m^{-3}]
Total
H
He
Xe
W
r/a