12. a) Pterm = 4 \*para \* (hzaspara – hpojnavoda) = 4009 MW

Ppumpa = (Pterm – Pjezgra)/4 = 4,75 MW

b) e = (Pjezgra \* 270 \* 235)/(200 \* 1,6 \* 10^-13 \* φ \* Ϭf \*m(UO2) \* 238 \* Na) = 3,02%

c) = Pjezgra/(c \* ΔT \* 4) = 4972,58 kg/s

13. a) Hn = Hb + Hzah – Hodv = 200 m

300=450 – 30 \* t => t=5 mj.

Wbrutogod=730 \* 10^3 \* 9,81 \* 0,95 \* 200 \* (5 \* 300 + ) /{Q=450 – 30 \* t}

=3,898 TWh

b) Qmax=450 => Hgv=45 m; Hdv=9 m; Hnmax=Hgv-Hdv+Hzah-Hodv=196 m

Qmin=90 => Hgv=9m; Hdv=1,8 m; Hnmin=Hgv-Hdv+Hzah-Hodv=167,2 m

Qmax>Qi => Qpmax=300

Qpmin=90

Pmax=9,81 \* ρ \* η \* Qpmax \* Hnmax = 547,99 MW

Pmin=9,81 \* ρ \* η \* Qpmin \* Hnmin = 140,24 MW

14. Pterm=Pe/ η=1500 MW

Wgod= m \* Pterm \* tgod = 8,541 TWh (\*3,6kJ/Wh) = 30,748 \* 10^15 J (ili 30,748 PJ – petadžul)

C+O2 -> CO2 => n(C)=n(CO2)

m(ugljen)=Wgod/H=1,23 Tg (1,23 \* 10^12 g)

m(C)=0,75 \* m(ugljen) = 922,5 Gg (922,5 \* 10^9 g)

n(C)=m(C)/M(C)=76,869 Gmol = n(CO2)

m(CO2)= n(CO2) \* M(CO2) = 3,382 Mt

15. a) Wgod=P(v=8) \* t(v=8) + P(v=12) \* t(v=12) + Pn \* tn = 9,586 GWh

b) m = Wgod/(Pn \* tgod) = 0,316

16. a) Wgod = Hh \* (Hbetaopt/Hh){=1,20} \* A \* η = 1,901 GWh

b) Pn = G \* A \* η = 990 kW

c) N = Pn/(f \* Iks \* Uph) = 122,2 => N=123 (zaokruzujemo na prvi gornji cijeli broj)

17. Wk = Pmin \* 24h = 19,2 GWh

Wuk = 6h\*800MW + 2h\*1000MW + 1h\*1200MW + 3h\*1300MW + 2h\*1500MW + 1h\*1600MW + 3h\*1700MW + 3h\*1900MW + 3h\*2000MW = 33,3 GWh

Wv = Wuk – Wk = 14,1 GWh

Tv = 24h – Tmin = 18h

Pv = Pmax – Pmin = 1200MW

m= Wuk/(Pmax \*24h) =0,694

Tmax = Wuk/Pmax = m \* 24h = 16,65 h

Crtanje: TEmin -> NE -> HE1 -> HE2 ->Teost -> RHE (HE1 prije HE2 jer ljepse popunjava graf :D, ak nisu zadane cijene svejedno je rekao bih)

b) Wpreljev = (1100-800)MW \* 6h + (1100-1000)MW \* 2h = 2000 MW (uglavnom sve sto HE2 proizvede izvan grafa)

Wrhe= η \* Wpreljev = 1200 MW

Wprorhe=3h\*(2000-1800)MW + 3h\*(1900-1800)MW = 900 MW

ηrhe = Wprorhe/Wrhe = 0,75

c) (α+β)=2 \* Wv/(Tv \* Pv) => α= β=0,653

P1= β \* Pv + Pmin = 1584 MW

t1 = α \* Tv = 11,75 h