$$\exists r > 0, \exists \tau > 0, \exists t_0 \in \mathbb{R} : \forall t \in \{0, \ldots, T-1\},$$

$$t = 0 \ldots T-1 \qquad T \sim 100 - 500$$

$$B_t = \frac{1}{r} \frac{e^{\frac{-(t-t_0)}{\tau}}}{\left(1 + e^{\frac{-(t-t_0)}{\tau}}\right)^2}$$

$$\forall n \in \{1, \ldots, N\}, \forall t \in \{0, \ldots, T-1\}, \quad R_{n,t} \geq 0 \qquad R_{n,t+1} = (1 + \alpha_{n,t}) R_{n,t} \qquad \alpha_{n,t} \in [-1, \infty[$$

$$C_{n,t}(R_{n,t}, \alpha_{n,t}) \geq 0 \qquad M_{n,t} \geq 0 \qquad \gamma_{n,t} = \frac{\Delta_{n,t}}{ERoEI_{n,t}} \qquad \mu_{n,t} = \frac{1}{ERoEI_{n,t}}$$

$$\forall n \in \{1, \ldots, N\}, \forall t \in \{0, \ldots, T-1\}, \exists \gamma_{n,t} > 0$$

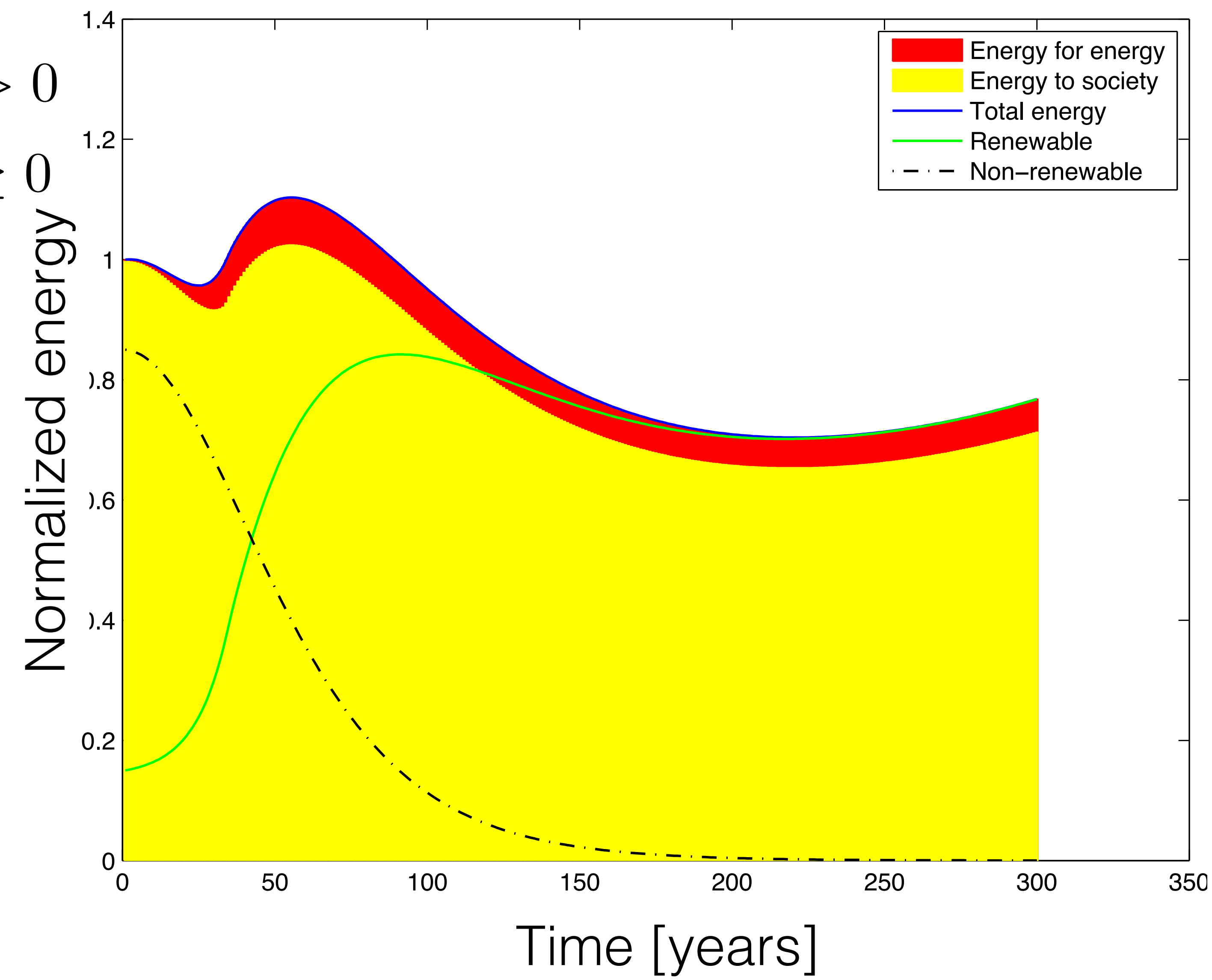
$$C_{n,t}(R_{n,t}, \alpha_{n,t}) = \begin{cases} \gamma_{n,t} \alpha_{n,t} R_{n,t} \text{ if } \alpha_{n,t} \geq 0 \\ 0 \text{ else} \end{cases}$$

$$\exists \mu_{n,t} > 0 : M_{n,t}(R_{n,t}) = \mu_{n,t} R_{n,t}$$

$$\forall t \in \{0, \ldots, T-1\}, E_t = B_t + \sum_{n=1}^{N} R_{n,t}$$

$$S_t = E_t - \left(\sum_{n=1}^{N} C_{n,t}(R_{n,t}, \alpha_{n,t}) + M_{n,t} \right)$$

$$\exists \sigma_t : C_{n,t}(R_{n,t}, \alpha_{n,t}) + M_{n,t} \leq \frac{1}{\sigma_t} E_t$$



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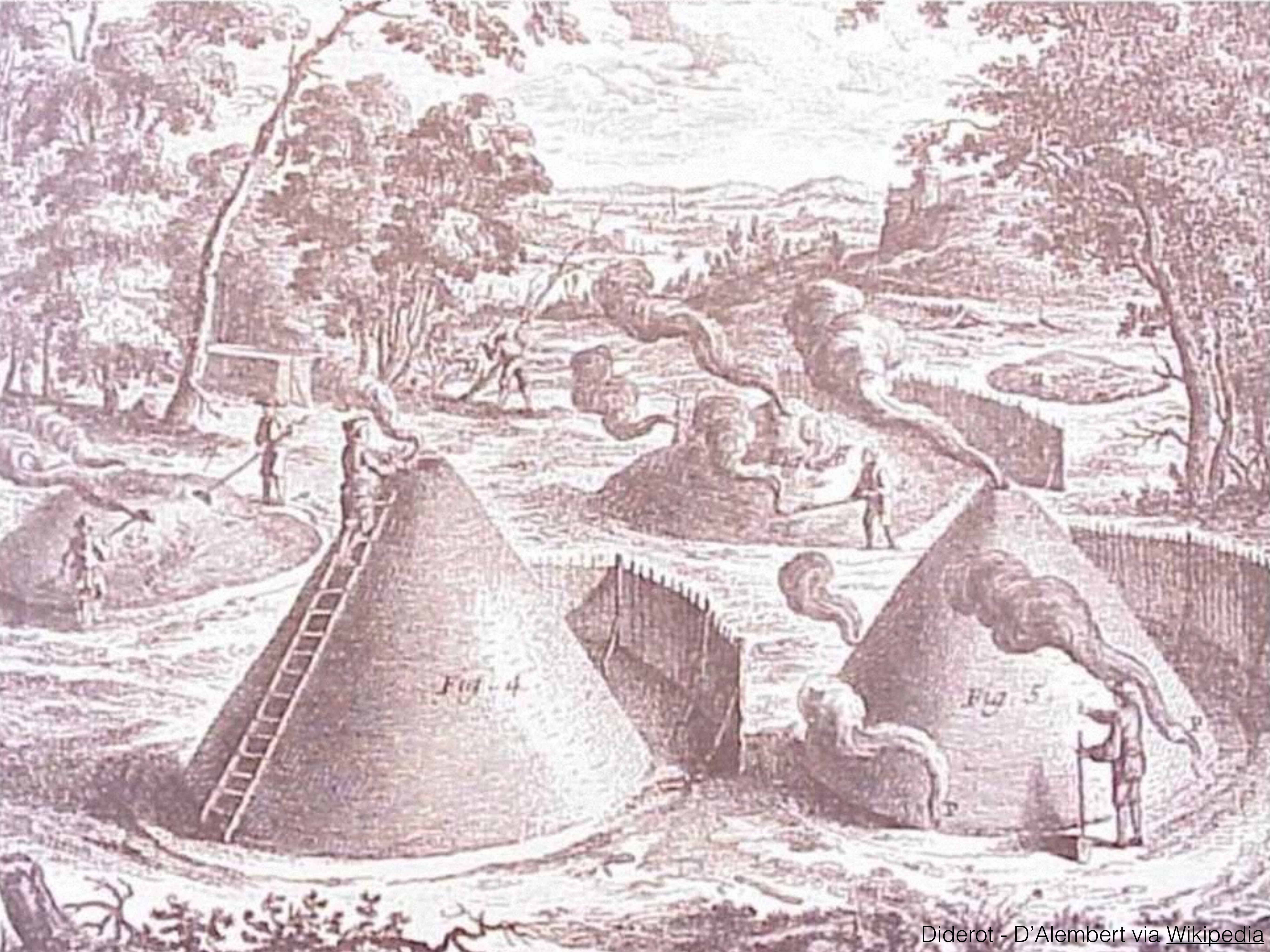
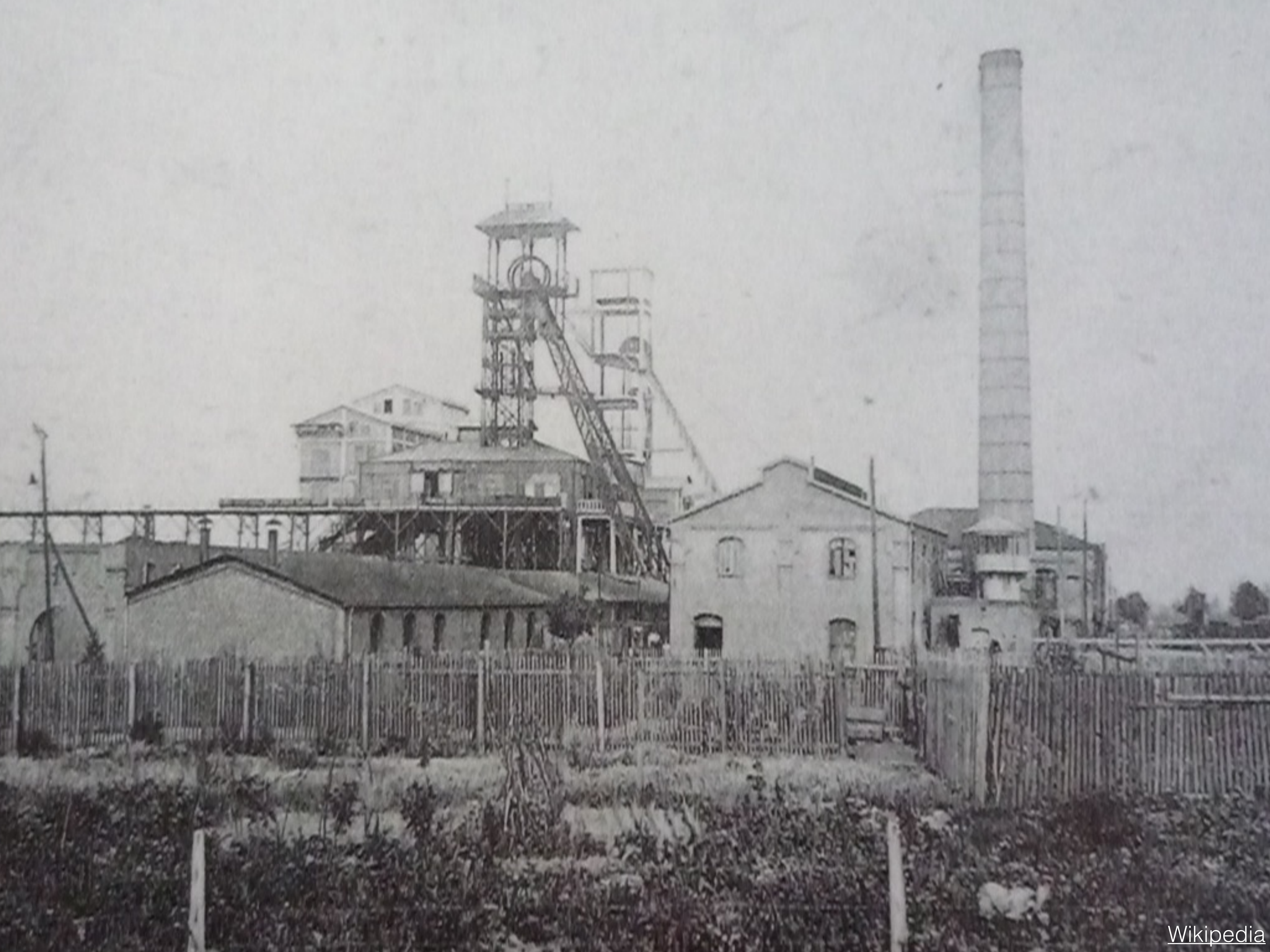


Diderot - D'Alembert via Wikipedia



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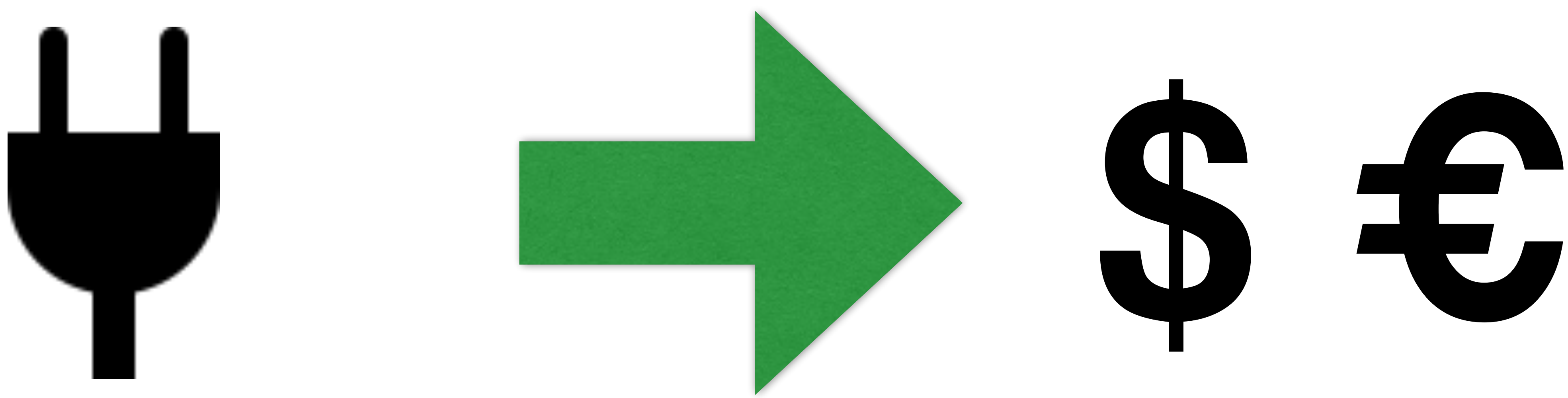

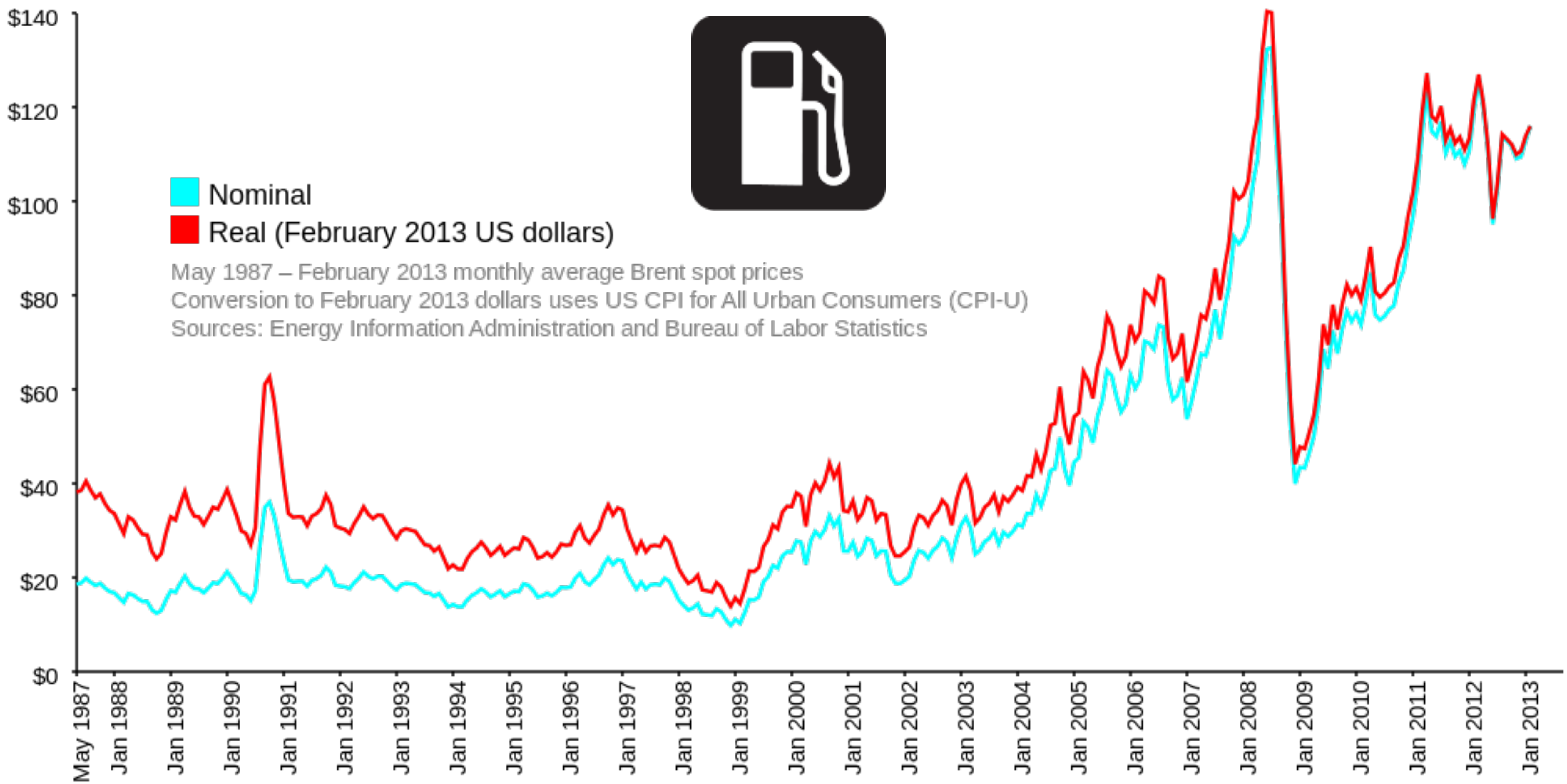

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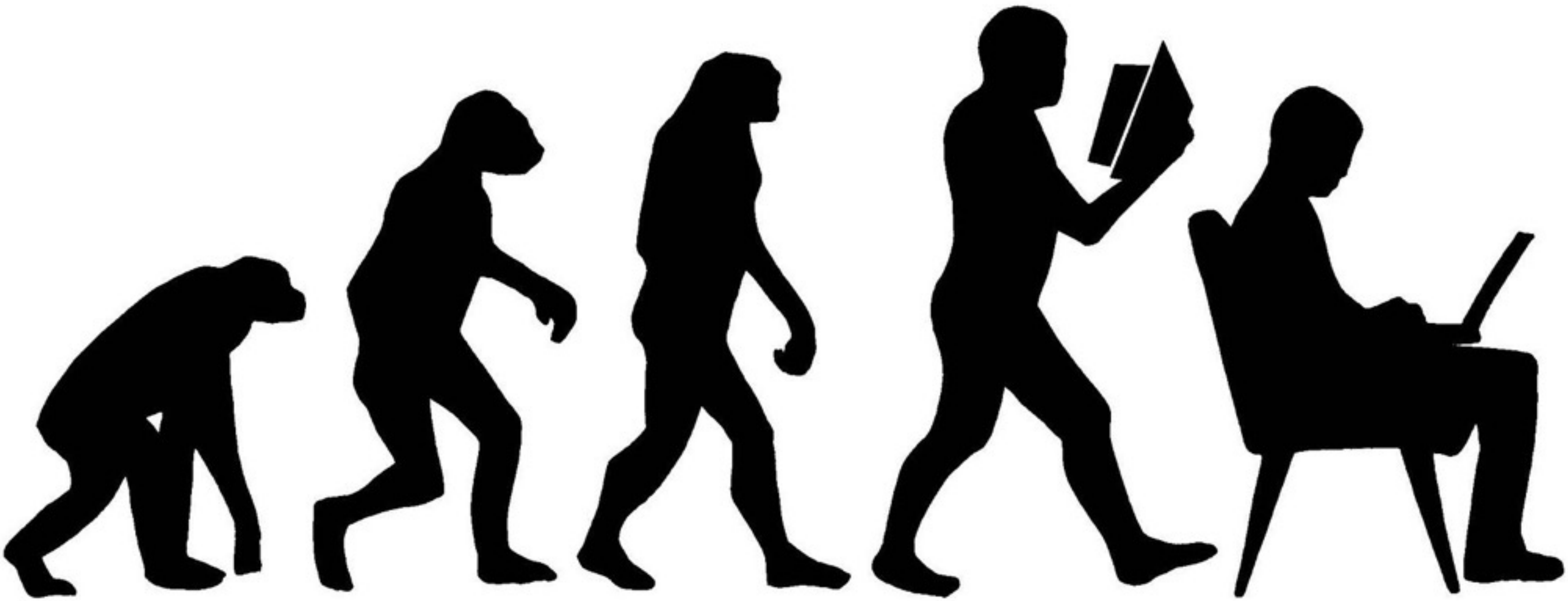

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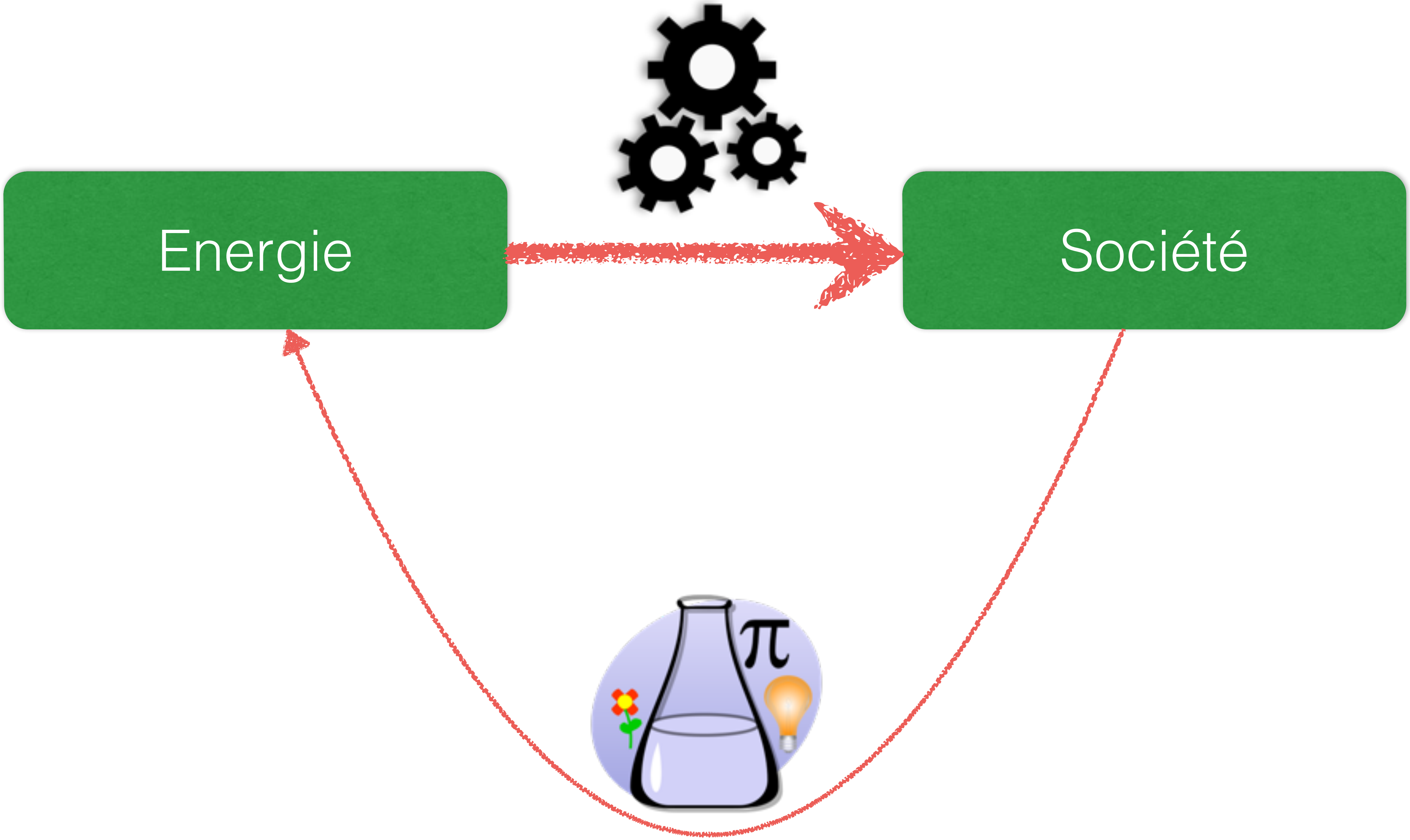
Energie
Société

Consommation mondiale d’énergie

Non renouvelable

> 80% - < 20%

Renouvelable


USAF via Wikipedia

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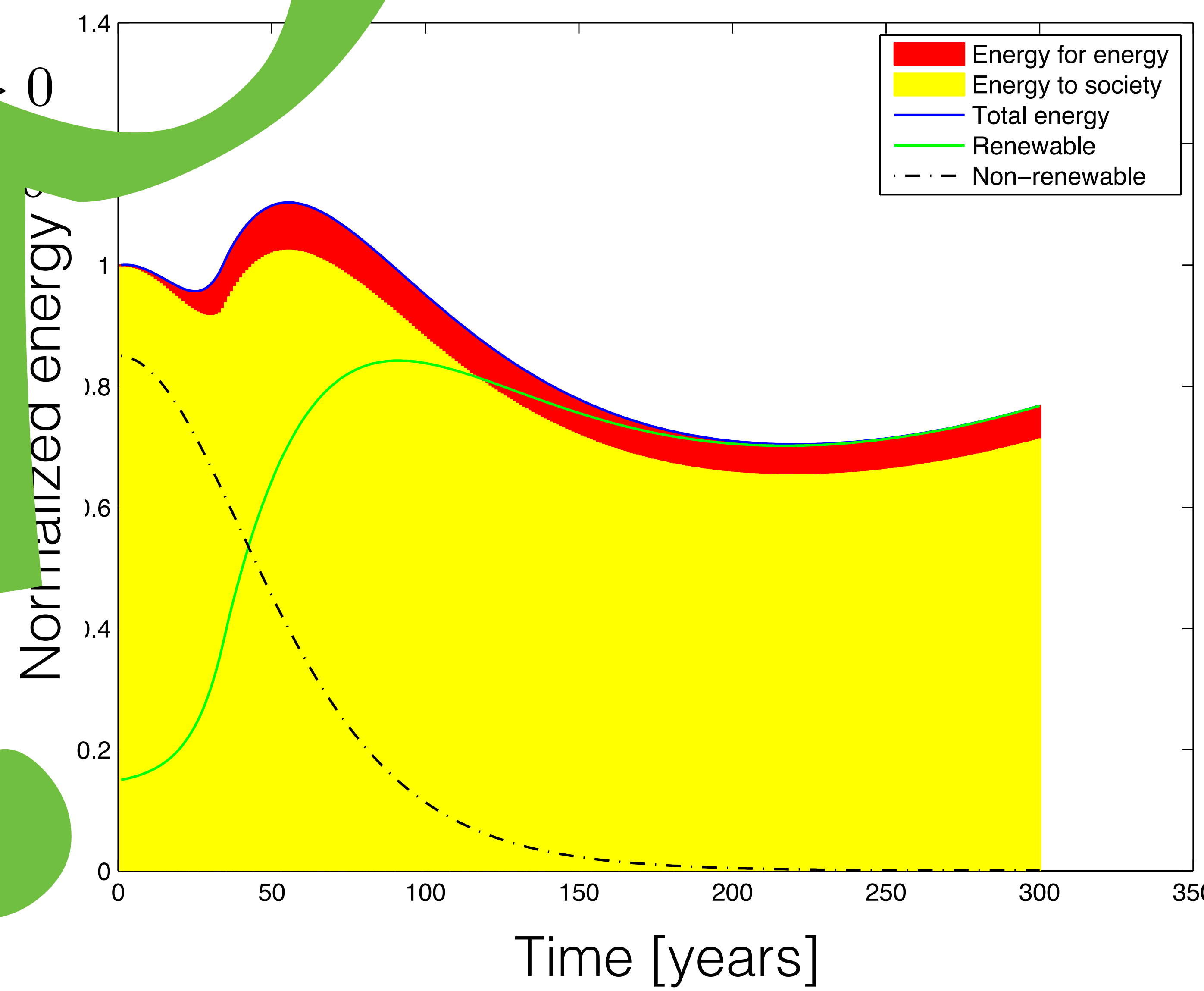

Fonteneau & Ernst, 2015

Kim Hansen via Wikipedia


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