To Recycle or Not to Recycle? An Intergenerational Approach to Nuclear Fuel Cycles

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Abstract This paper approaches the choice between the open and closed nuclear fuel cycles as a matter of intergenerational justice, by revealing the value conflicts in the production of nuclear energy. The closed fuel cycle improve sustainability in terms of the supply certainty of uranium and involves less long-term radiological risks and proliferation concerns. However, it compromises short-term public health and safety and security, due to the separation of plutonium. The trade-offs in nuclear energy are reducible to a chief trade-off between the present and the future. To what extent should we take care of our produced nuclear waste and to what extent should we accept additional risks to the present generation, in order to diminish the exposure of future generation to those risks? The advocates of the open fuel cycle should explain why they are willing to transfer all the risks for a very long period of time (200,000 years) to future generations. In addition, supporters of the closed fuel cycle should underpin their acceptance of additional risks to the present generation and make the actual reduction of risk to the future plausible.

Keywords Intergenerational justice · Nuclear waste management · Reprocessing · Recycling · Future generations · Value conflicts · Sustainability

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