

Nuclear energy: Improve collaboration

Technological collaboration between China and the United States in the field of nuclear energy is important for developing non-fossil energy and mitigating climate change ("China-U.S. cooperation to advance nuclear power," J. Cao *et al.*, Policy Forum, 5 August, p. 547). However, China should also expand collaboration with developed countries on the regulation and management of nuclear energy and in tackling public concerns (1, 2).

After the Fukushima accident, the percentage of the Chinese population against new nuclear power plants increased from 13% to 54% (3). After a 3-year suspension, China reignited its ambitious nuclear plan. However, numerous industrial accidents occurred, including the deadly 2015 Tianjin explosion (4), and the program has slowed once again because it lacked public trust (5). For example, on August 6 2016, thousands of people protested against a proposed nuclear waste treatment plant in Lianyungang, east China. Four days later, local government suspended the project (6).

As living standards have improved, the Chinese middle class has woken up to China's many environmental problems (7). The United States and Europe address public concerns through community outreach, education, and advisory boards (8). China needs to develop similar approaches. To address the poor coordination, planning, and management of its nuclear program, China must develop the institutions required for safe nuclear development (9), encourage an independent and transparent regulatory regime, and strictly enforce regulations (10).

These changes will require more social science research and funding to incorporate expertise and information from community leaders and indigenous groups (1, 11). Development of the state-of-the-art nuclear energy technology should go hand in hand with world-class regulatory infrastructure and public engagement mechanisms.

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REFERENCES

1. B. K. Sovacool, *Nature* **511**, 529 (2014).
2. C. Liu, Z. Zhang, S. Kidd, *Nucl. Eng. Des.* **238**, 2834 (2008).
3. L. Huang *et al.*, *Proc. Natl. Acad. Sci. U.S.A.* **110**, 19742 (2013).
4. Z. W. Tang, Q. F. Huang, Y. F. Yang, *Nature* **525**, 455 (2015).
5. Lianyungang Government, "Lianyungang Government's decision: Suspend the pilot work of selecting place for the nuclear waste recycling project" (2016); www.lyg.gov.cn/art/2016/8/10/art_1756_643365.html.
6. X. Guo, X. Guo. *Renew. Sust. Energ. Rev.* **57**, 999 (2016).
7. T. Johnson, *Environ. Polit.* **19**, 430 (2010).
8. M. R. Greenberg. *Energy Res. Soc. Sci.* **1**, 152 (2014).
9. Y. C. Xu, *Energy Pol.* **73**, 21 (2014).
10. H. Yang, X. Huang, J. R. Thompson, R. J. Flower, *Science* **347**, 834 (2015).
11. S. Christopher, V. Watts, A. K. H. G. McCormick, S. Young, *Am. J. Public Health* **98**, 1398 (2008).