

BY THE NUMBERS:

THE UNINTENDED CONSEQUENCES

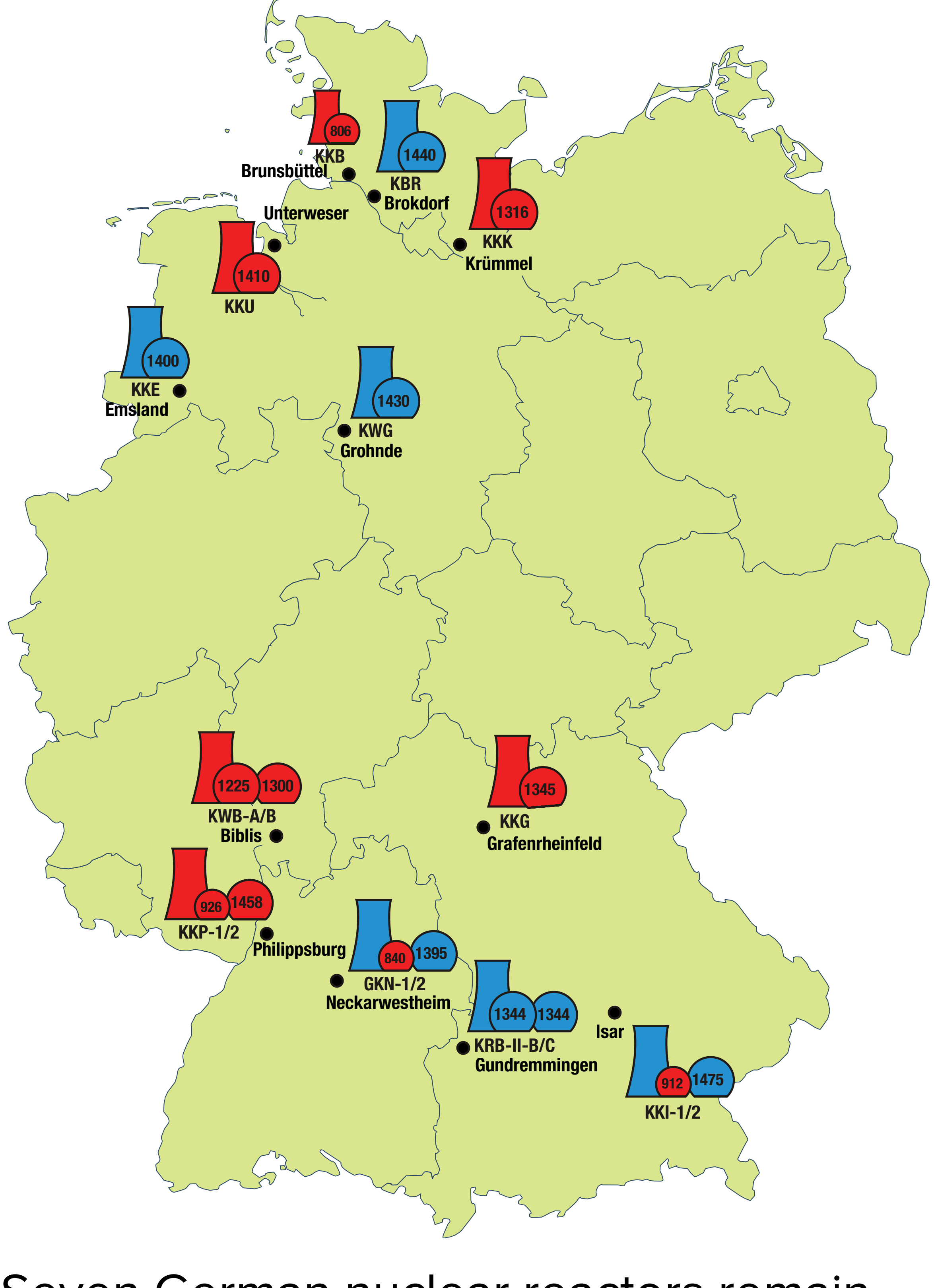
BY JEFFREY WINTERS

Spurred by ecological fears after the Fukushima reactor accident, Germany began closing its nuclear plants. Who paid the price?

The government of Germany, under pressure from a large number of Green Party voters, enacted a plan to phase out all its nuclear reactors by 2022. Today, nine German reactors have been shuttered and the other seven will be closed in the next two years.

The move was prompted by fears over the ecological impact of nuclear power, but many experts pointed out at the time that eliminating nuclear power could have a large negative effect of its own: Keeping coal-fired plants up and running and emitting carbon dioxide and other pollutants into the atmosphere.

Recently, a team of economists compared the health and economic costs of the nuclear phase-out to an alternative where nuclear plants kept running and coal was shut down. The price tag? The economists estimate the shift from nuclear to coal has exacted a “social cost” of \$12 billion per year. And an annual toll of more than 1,000 extra deaths due to pollution.



Seven German nuclear reactors remain in operation (blue), while 10 have been closed since 2011. The entire sector will be phased out in two years.



KRB Brokdorf



KKE Emsland



KKW Grohnde



KRB-II-B/C Gundremmingen



KKI Isar



GKN-1/2 Neckarwestheim

	AVERAGE IN 2017	AVERAGE WITHOUT PHASEOUT
Production (TWh/year)	574.4	574.2
Nuclear	86.2	139.4
Lignite	160.4	154.3
Hard Coal	118.3	89.8
Gas	39.8	31.6
Oil	11.1	10.7
Net Electricity Imports	-17.2	-27.4
Renewables and Others	175.8	175.8
Wholesale Prices (per MWh)	\$47.3	\$45.5
Mortality (excess deaths/year)	8,549.7	7,407.2
Lignite	4,142.9	3,988.1
Hard Coal	3,776.2	2,870.9
Gas	366.1	293.0
Oil	264.4	255.3