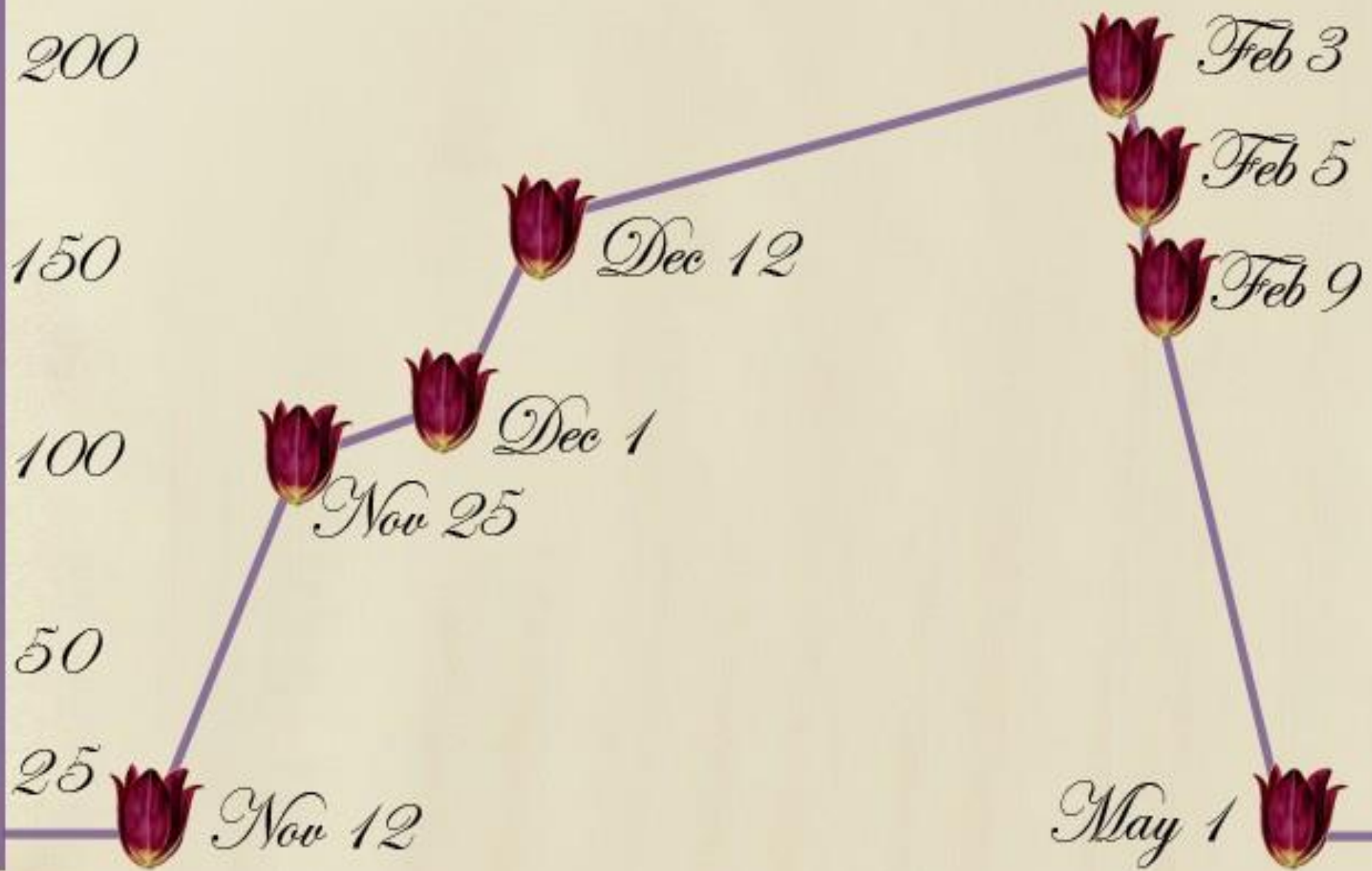# Cryptocurrency and Pollution

Charles McPhedran

Earthjustice

Cryptocurrency

➢Alternative

➢Distributed

➢Validation method

➢Proof of Work/Proof of Stake/Others
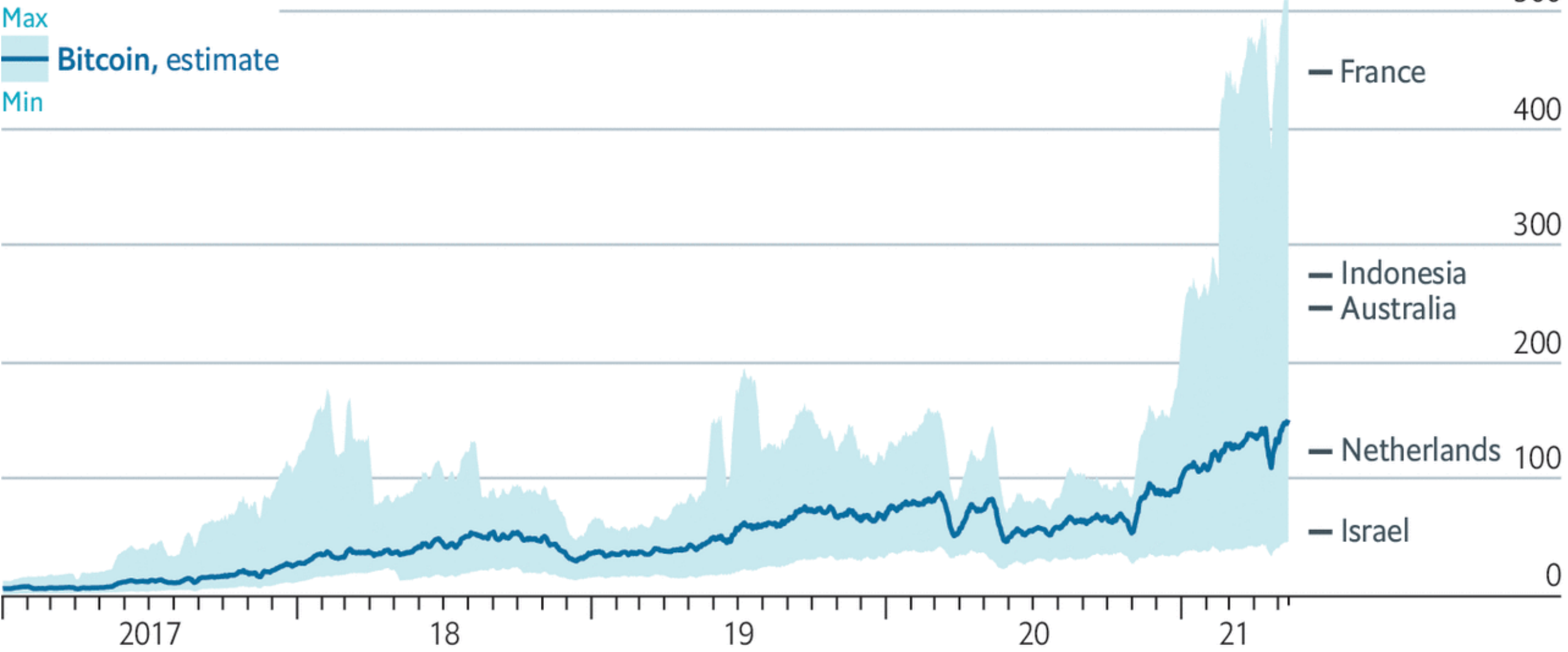
➢Energy Use

Tulip price index 1636-37

- 200
- 150
- 100
- 50
- 25

Feb 3
Feb 5
Feb 9
Dec 12
Dec 1
Nov 25
Nov 12
May 1

De Bol Gewoogo
410 Ass
658

Bitcoin's Price History

Dollars

80,000

70,000

11/9/2021
$67,617

60,000

50,000

40,000

7/10/2013
$77.00

30,000

20,000

10,000

0

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

Years

Power hungry

Electricity consumption, terawatt-hours, annualised

Canada

500

Max

— **Bitcoin,** estimate

France

Min

400

300

Indonesia
Australia

200

Netherlands 100

Israel

0

2017   18   19   20   21

Source: Cambridge bitcoin electricity consumption index

The Economist

Impacts from Cryptomining Energy Use

➢Underlying Energy Source
➢Greenhouse Gases
➢Combustion Waste
➢Subsidies
➢Water
➢E-waste
➢Air Pollution
➢Noise

Proof of Stake

Cryptomining in Pa.

➢Waste coal

➢Gas

➢Wellhead gas

➢Nuclear

➢More (e.g., fractracker.org)

Tools

➤Require Permits

➤Permit Enforcement

➤Permit Improvement

➤New Source Review/Prevention of Significant Deterioration

➤Address New Fuels

➤Eliminate Fossil Incentives

➤Noise

➤Section 27

➤Citizen Engagement