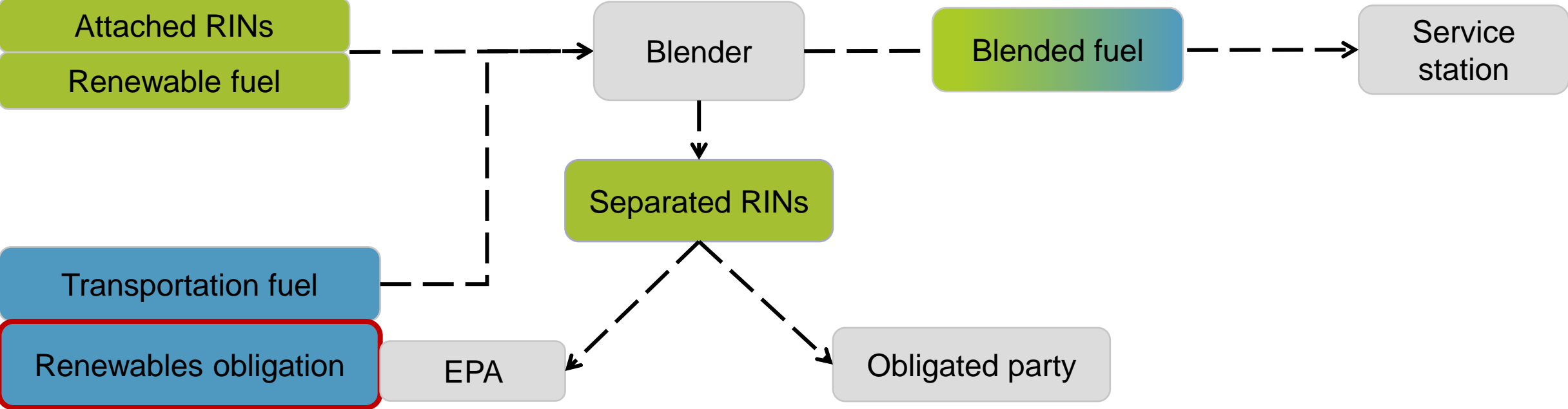


RINs and RVOs: an uncertain market

Sophie Byron, Senior Managing Editor,
Americas Agriculture, S&P Global Platts

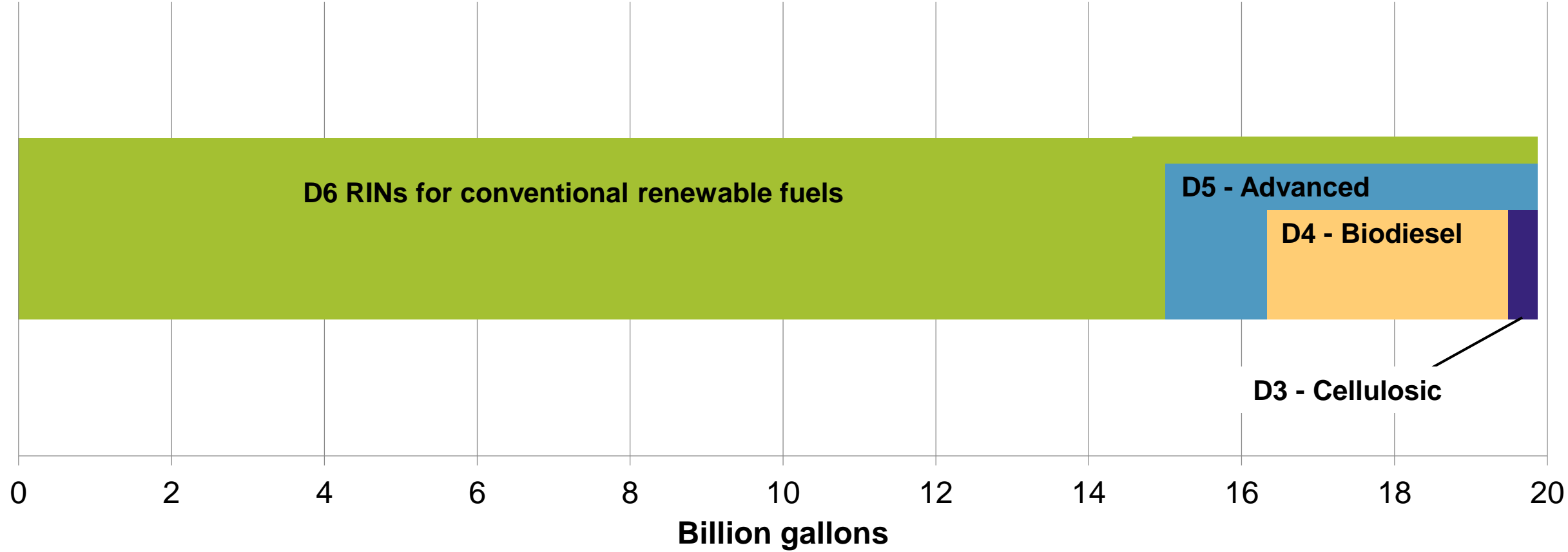


Renewable Identification Numbers: the basics



Source: EPA

The renewables nesting scheme



Source: EPA

Is the RFS broken?

D6 current year RINs



Source: S&P Global Platts

What is the RVO? And how is its calculated

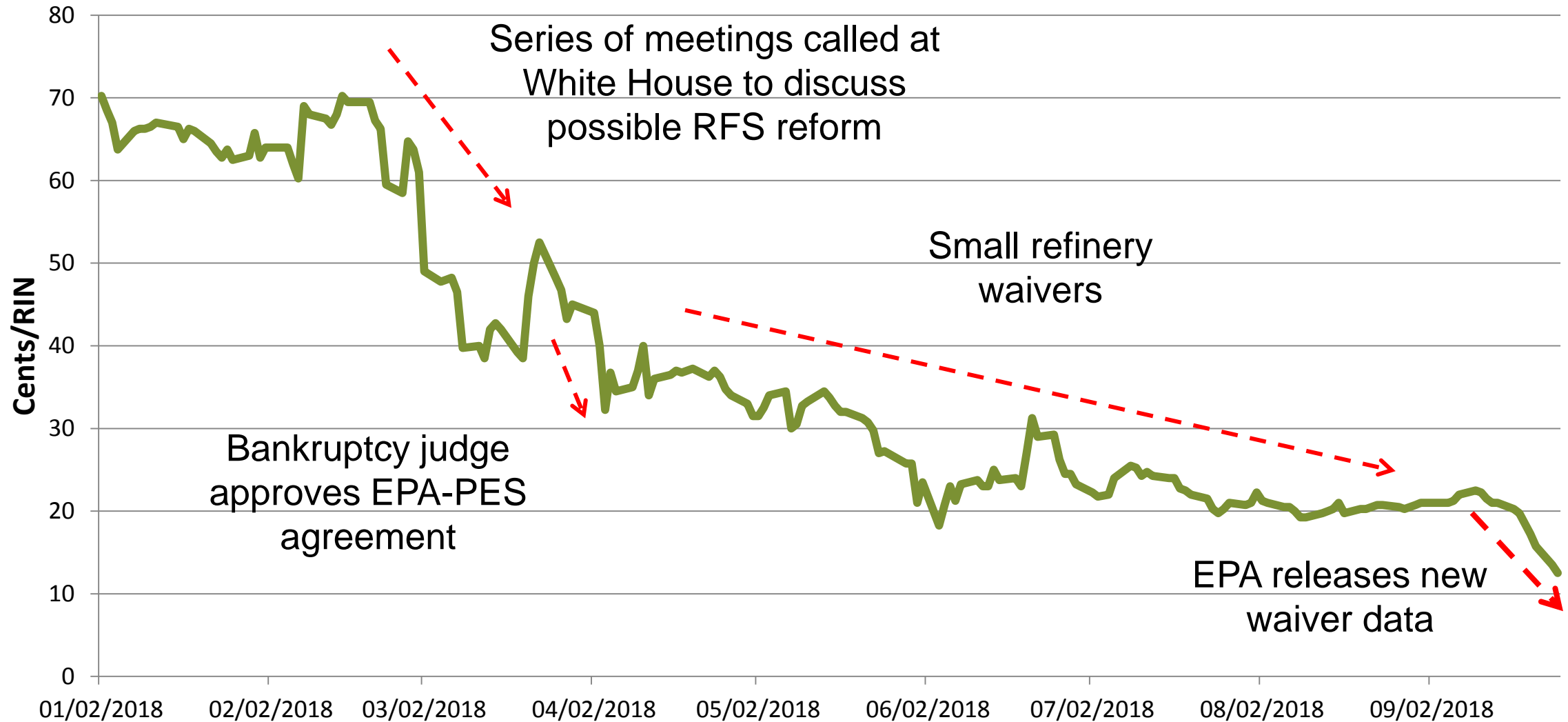
Cent per gallon daily RVO value calculated using:

- Daily RIN assessments
- RFS percentage as published EPA

	RVO	Biodiesel %	Biodiesel RIN	Ethanol %	Ethanol RIN	Adv. Biofuel %	Adv. Biofuel RIN	Cellulosic %	Cellulosic RIN
2018	2.9554	1.74	42.25	8.3	20.25	0.471	38.25	0.159	226
2019	3.6775	1.72	49.25	8.21	24.25	0.741	45.25	0.209	241.25

Drivers in RINS/RVOs market

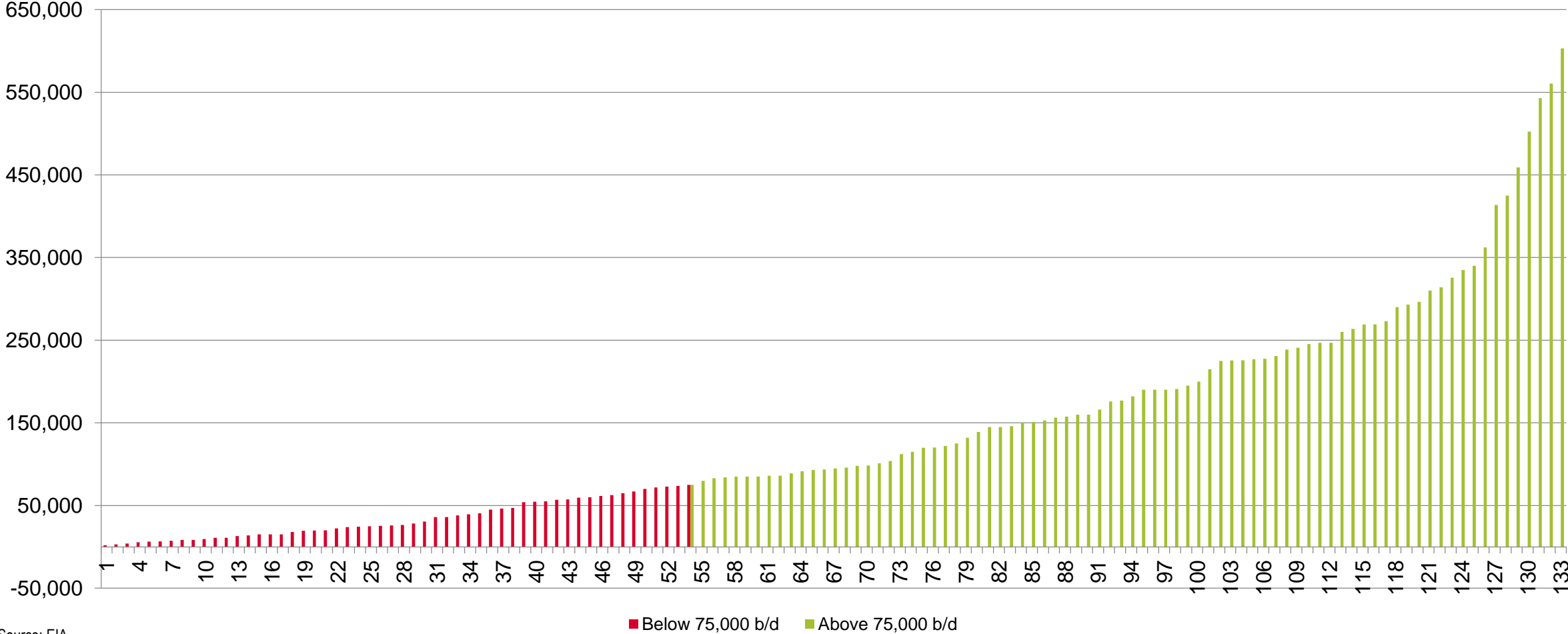
D6 RIN prices in 2018



Source: S&P Global Platts

Refiner Exemptions and to 'disproportionate economic hardship'

Refinery Capacity Data by Refinery (b/d)



Source: EIA

History of small refinery exemption petitions

Year	Petitions Received	Grants Issued	Denials Issued	Petitions Ineligible or Withdrawn	Pending Petitions
2013	16	8	7	1	0
2014	13	8	5	0	0
2015	14	7	6	1	0
2016	20	19	0	0	1
2017	34	29	0	0	5
2018	11	0	0	0	11

Source: EPA

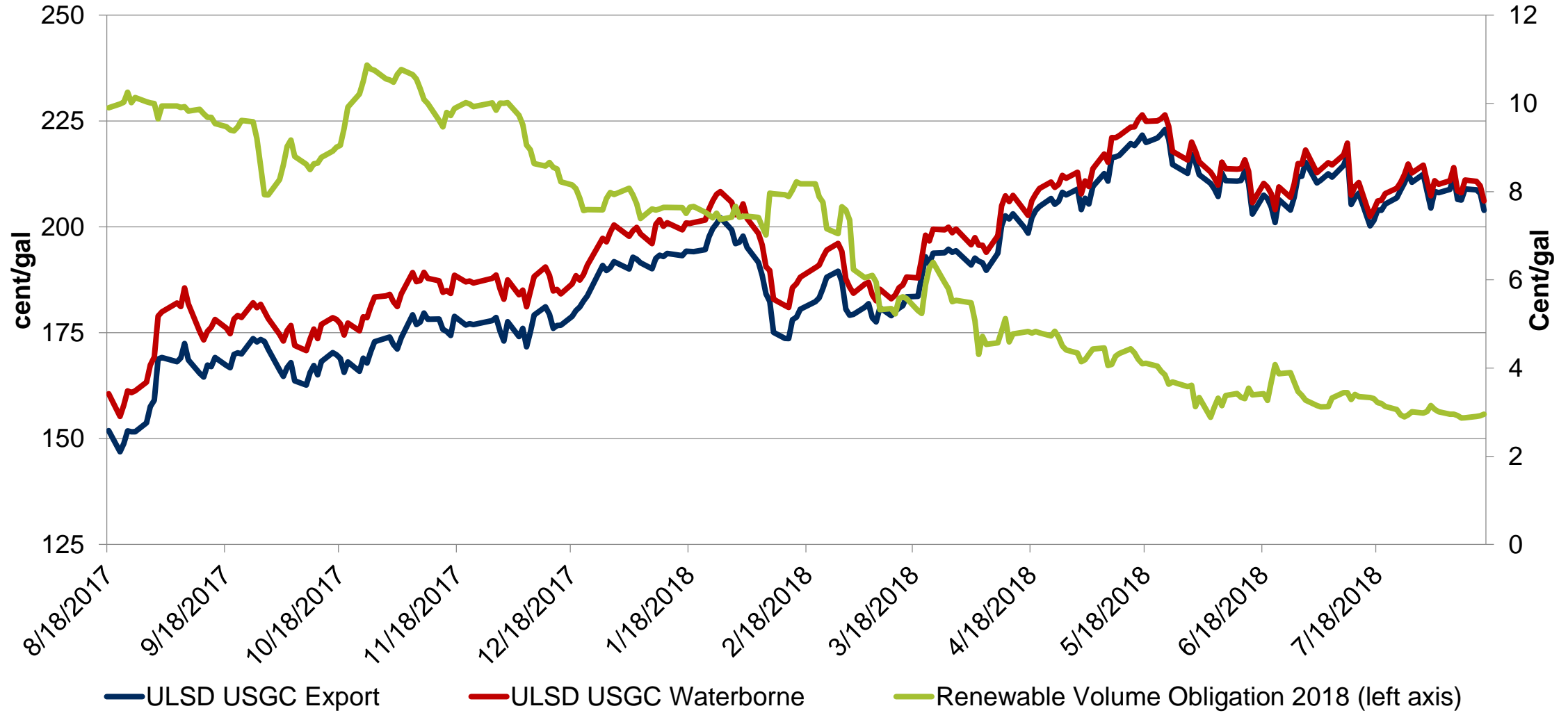
Impact of exemptions on RVO (billions of gallons)

Year	Estimated volumes of gasoline and diesel exempted (million gallons)	Estimated Renewable Volume Obligations (RVO) exempted (million RINs)
2013	1,980	190
2014	2,300	210
2015	3,070	290
2016	7,840	790
2017	13,620	1,460
2018	?	?

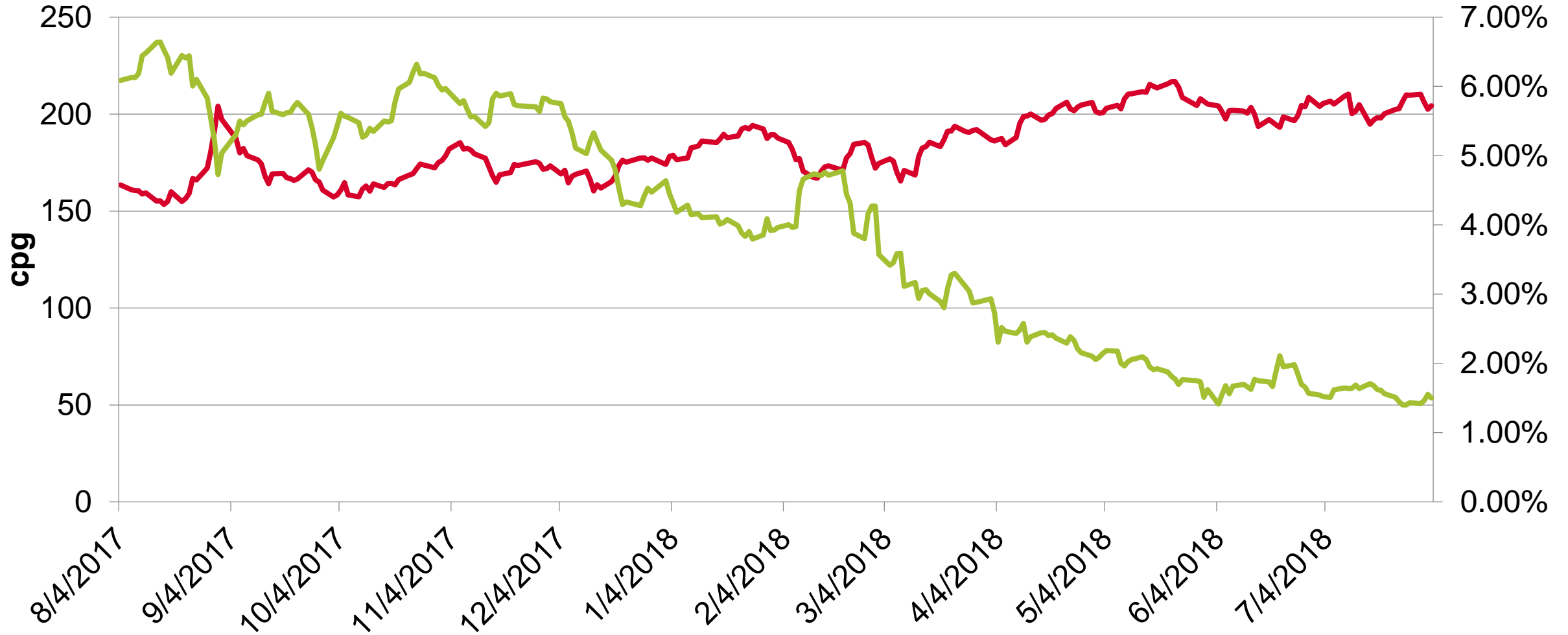
Source: EPA

RVO impact on refined products

ULSD export prices and the RVO



RVO as a % of the gasoline price



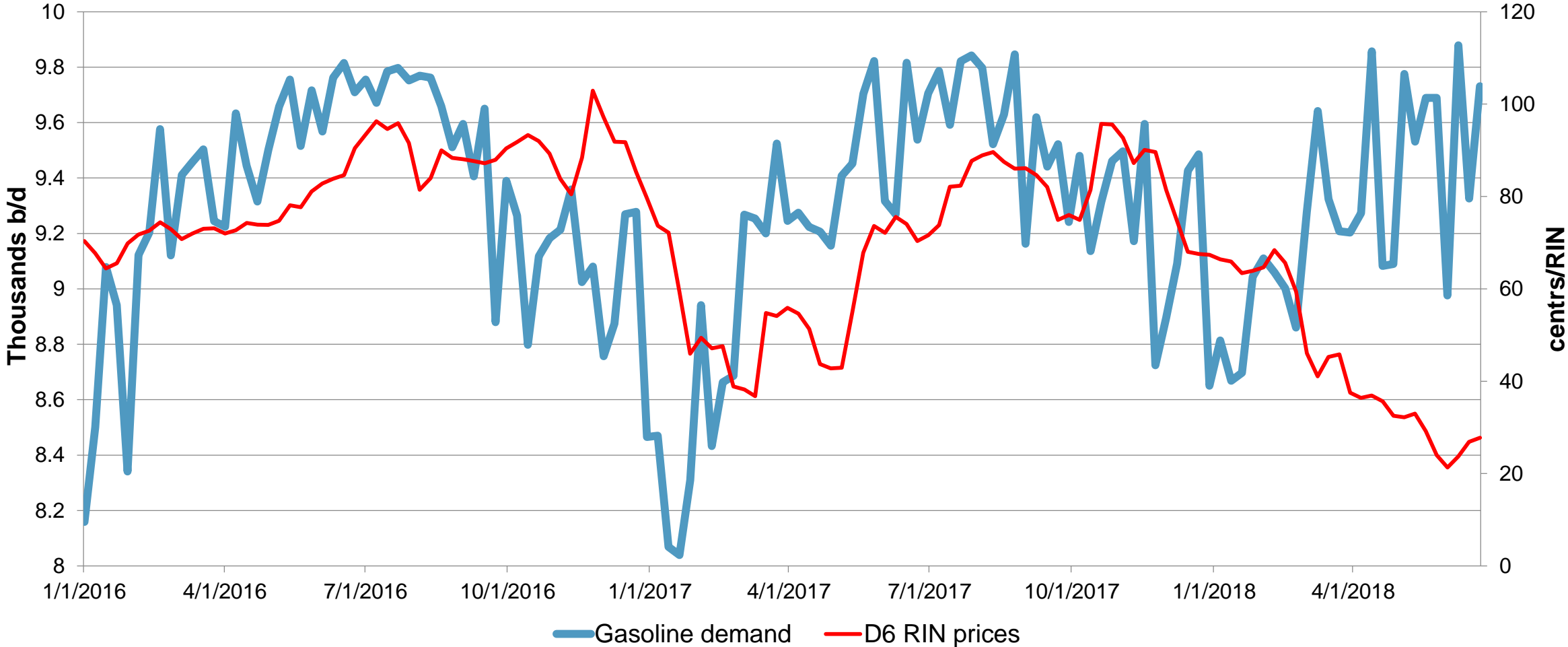
Source: S&P Global Platts

S&P Global
Platts

— Gasoline 87 USGC Pipeline — RVO %

RIN prices and gasoline demand

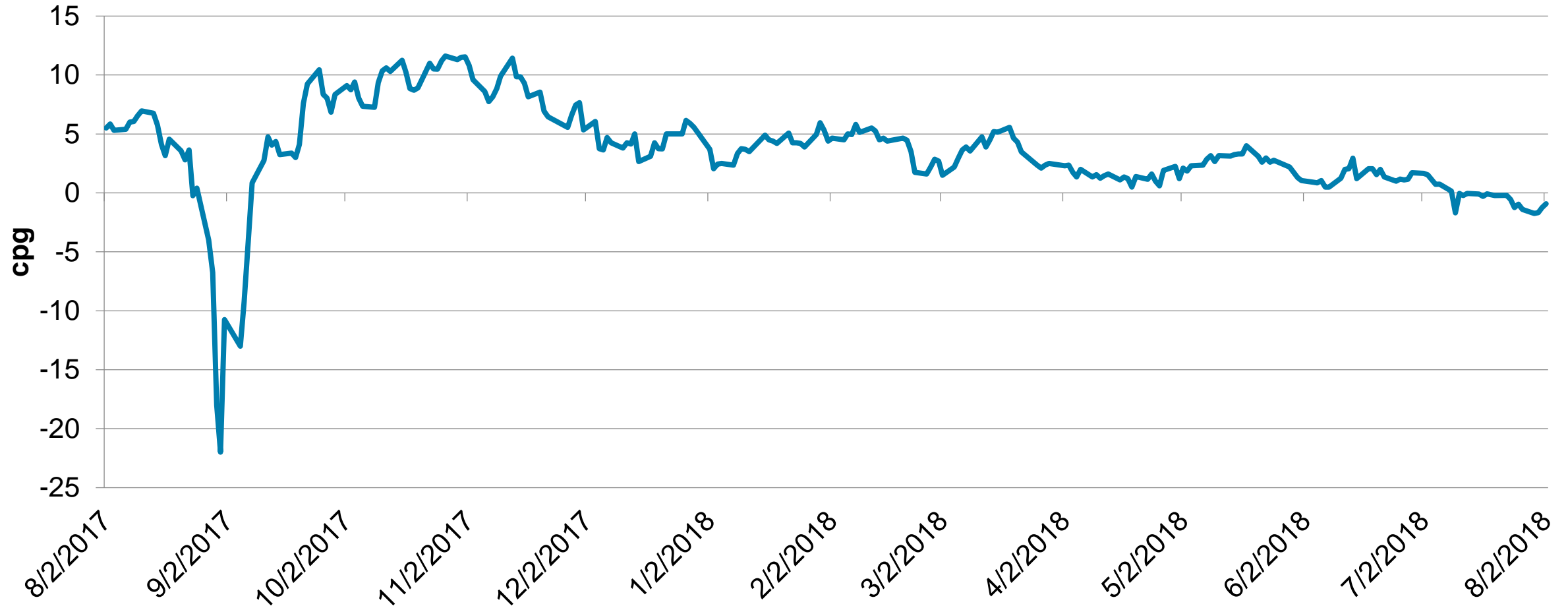
Can refiners pass on costs?



Source: S&P Global Platts



RINs moving ULSD-jet fuel spread



Source: S&P Global Platts

— ULSD-Jet spread

The policy questions

The exemption issue

“So they may as well have not released an RVO, because despite these numbers being written on paper, they may as well be on toilet paper.”

Market source

- If reallocation happens, RIN prices are expected to rise; otherwise, expected to go down.
- Some in Congress lobbying to have exemption volumes reallocated for 2019 requirements.
- Large refiners have fought efforts to reallocate exempt volumes
- Biofuel groups have sued over transparency requirements for granting exemptions

E15: corn ethanol demand growth?

Trump announces E15:
Environmental Protection Agency (EPA) is beginning a formal rulemaking process to allow year-round sales of E15 nationwide.



Thank you



Sophie Byron

Senior Managing Editor, Americas Agriculture

T: 832.918.3367 | C: 281.757.1929

sophie.byron@spglobal.com

Q&A