NORTH AMERICAN RENDERERS ASSOCIATION

FENAGRA 2022
Brazil Rendering Congress
Perspectives on the World Market For Animal Meals and Fats

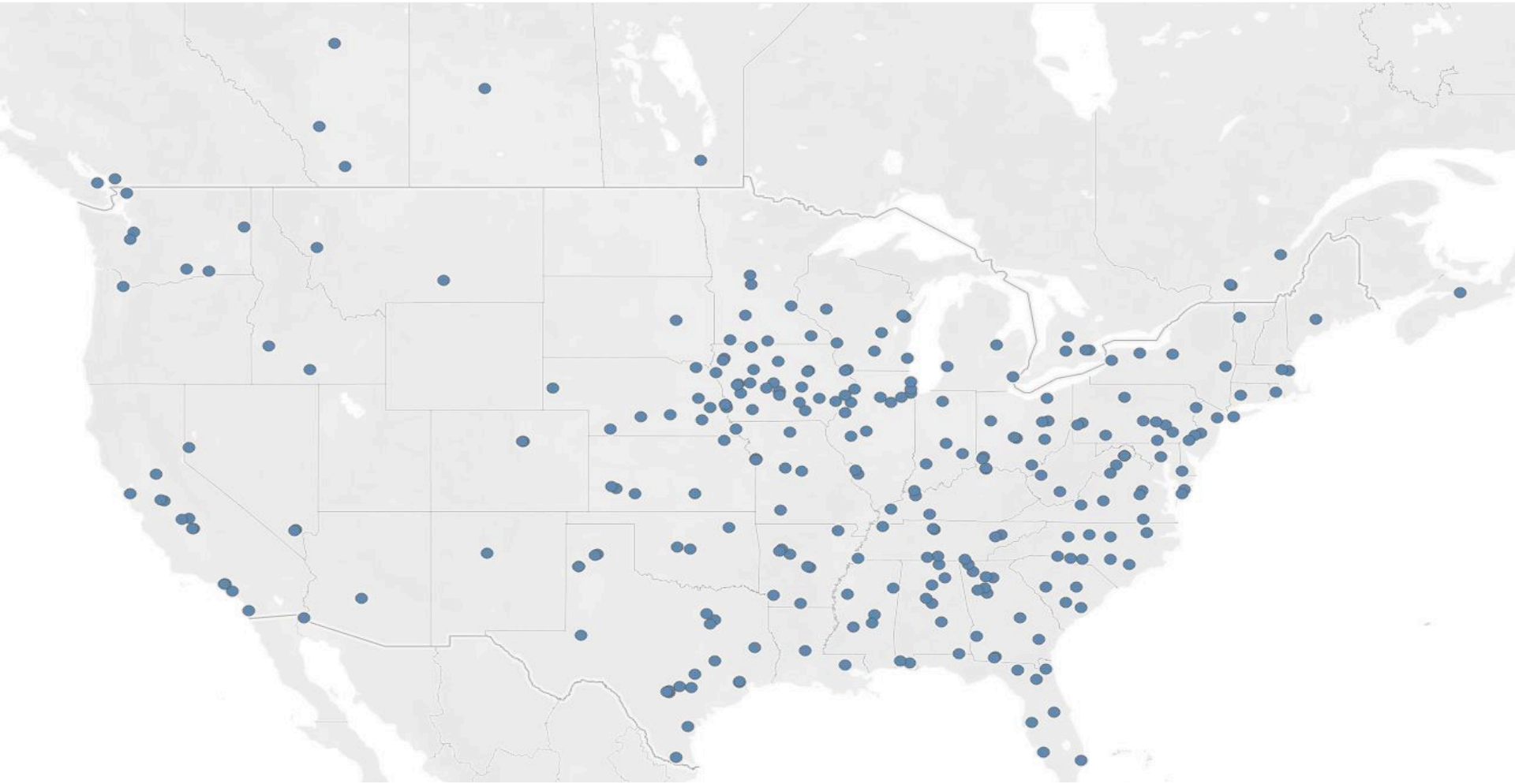
Kent Swisher
President & CEO

NORTH AMERICAN RENDERERS ASSOCIATION

- Founded 1933
- Represent over 95% of rendering in U.S. and Canada
  - Packer renderers
  - Independent renderers
- Headquartered in Alexandria, VA
- Offices in Hong Kong and Mexico City

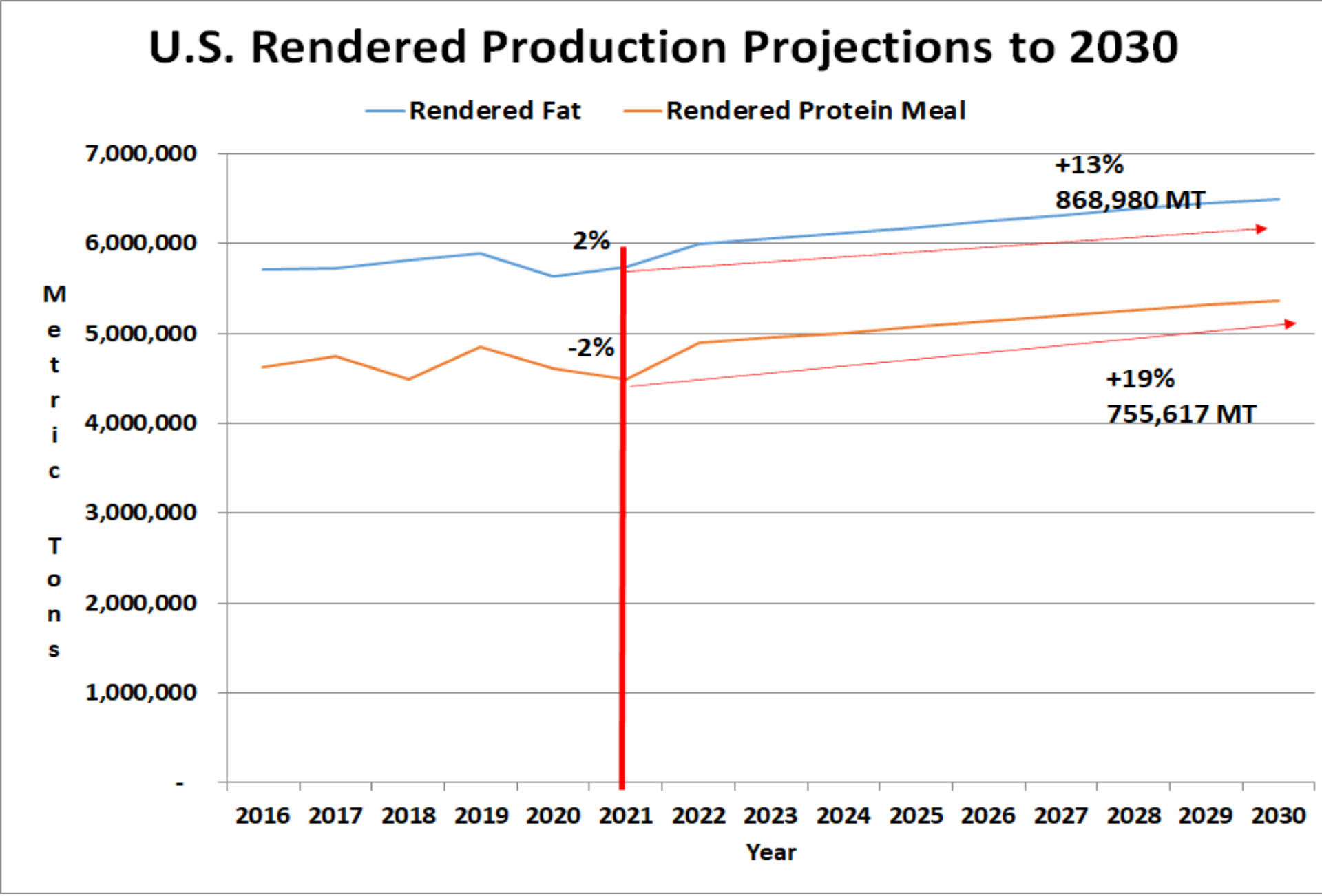
NORTH AMERICAN RENDERERS ASSOCIATION

Major Rendering and Transfer Facilities



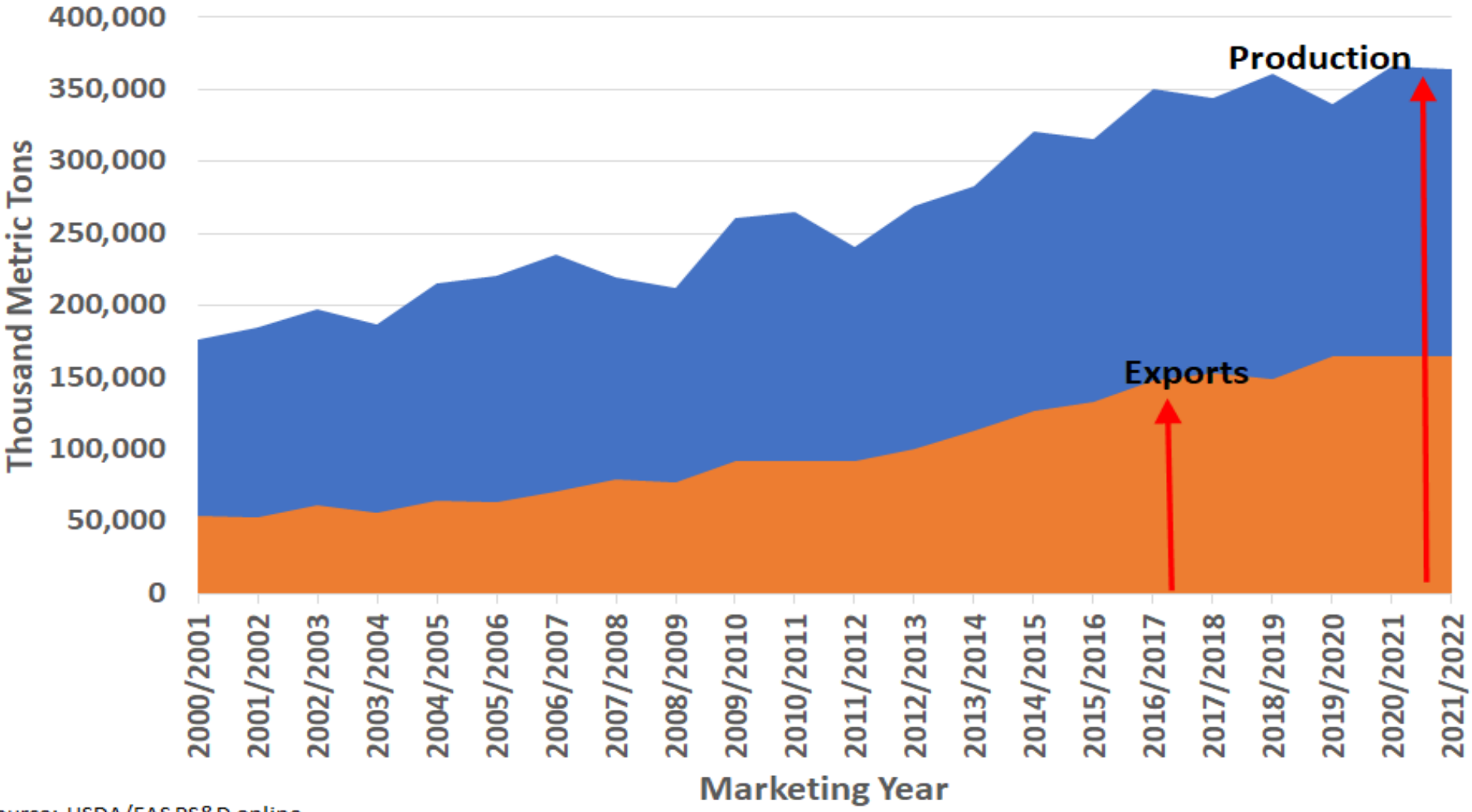
Production

U.S. Rendered Production Projections to 2030



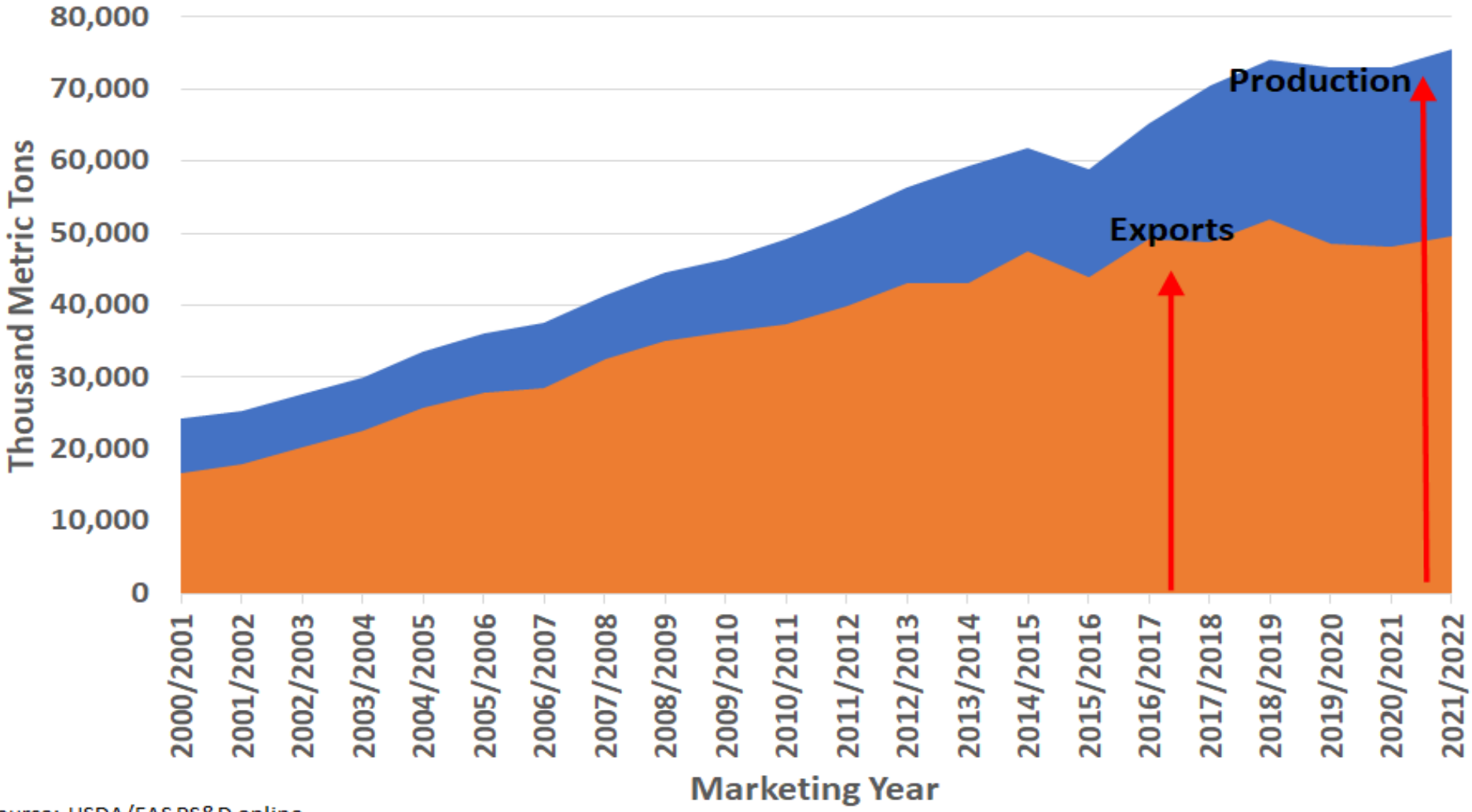
Source: NARA Forecast Based off USDA Slaughter Projections

Global Soybean Production and Exports (2000/01-2021/22)



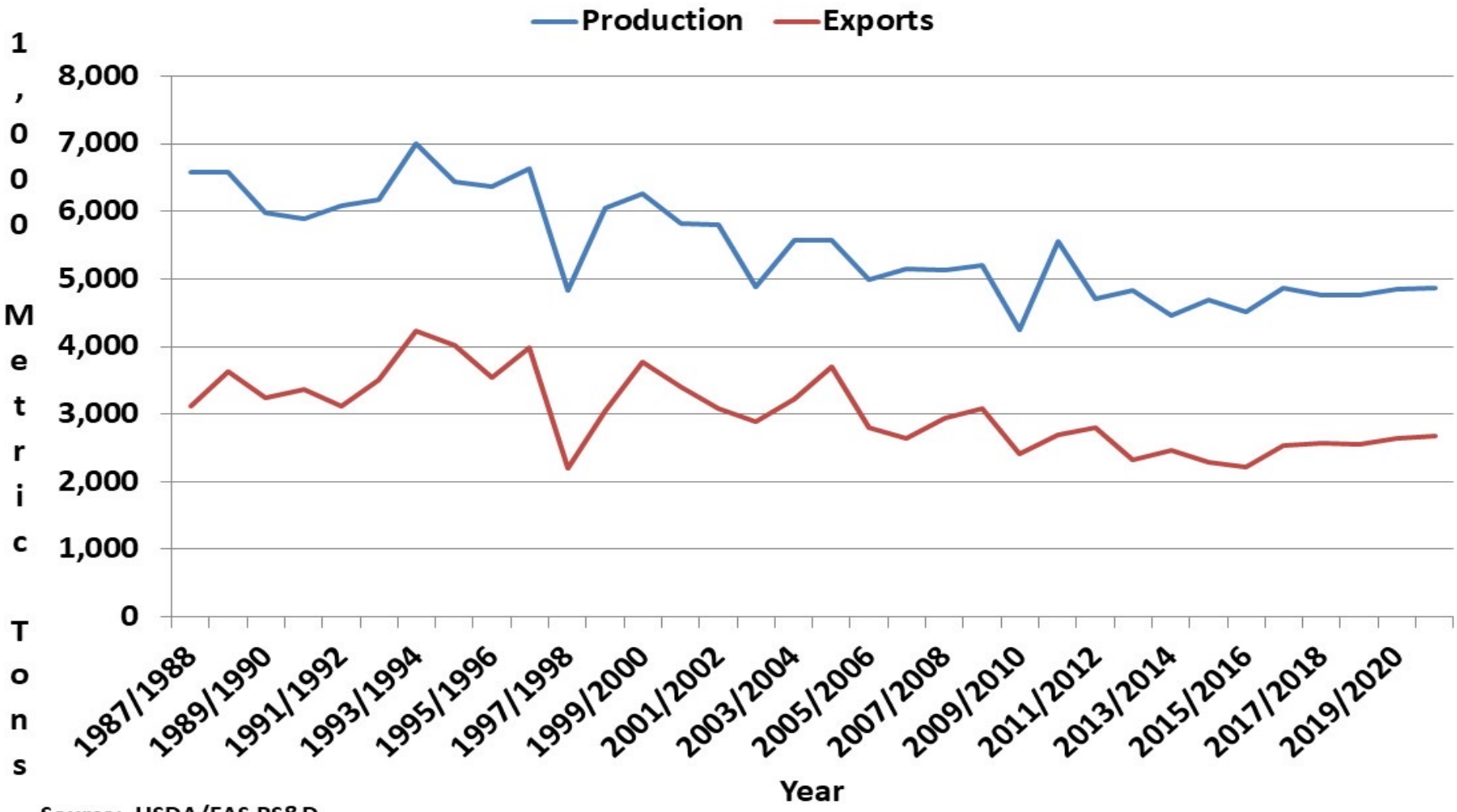
Source: USDA/FAS PS&D online

Global Palm Oil Production and Exports (2000/01-2021/22)



Source: USDA/FAS PS&D online

Global Production, Consumption, Exports of Fishmeal (1987-2020)



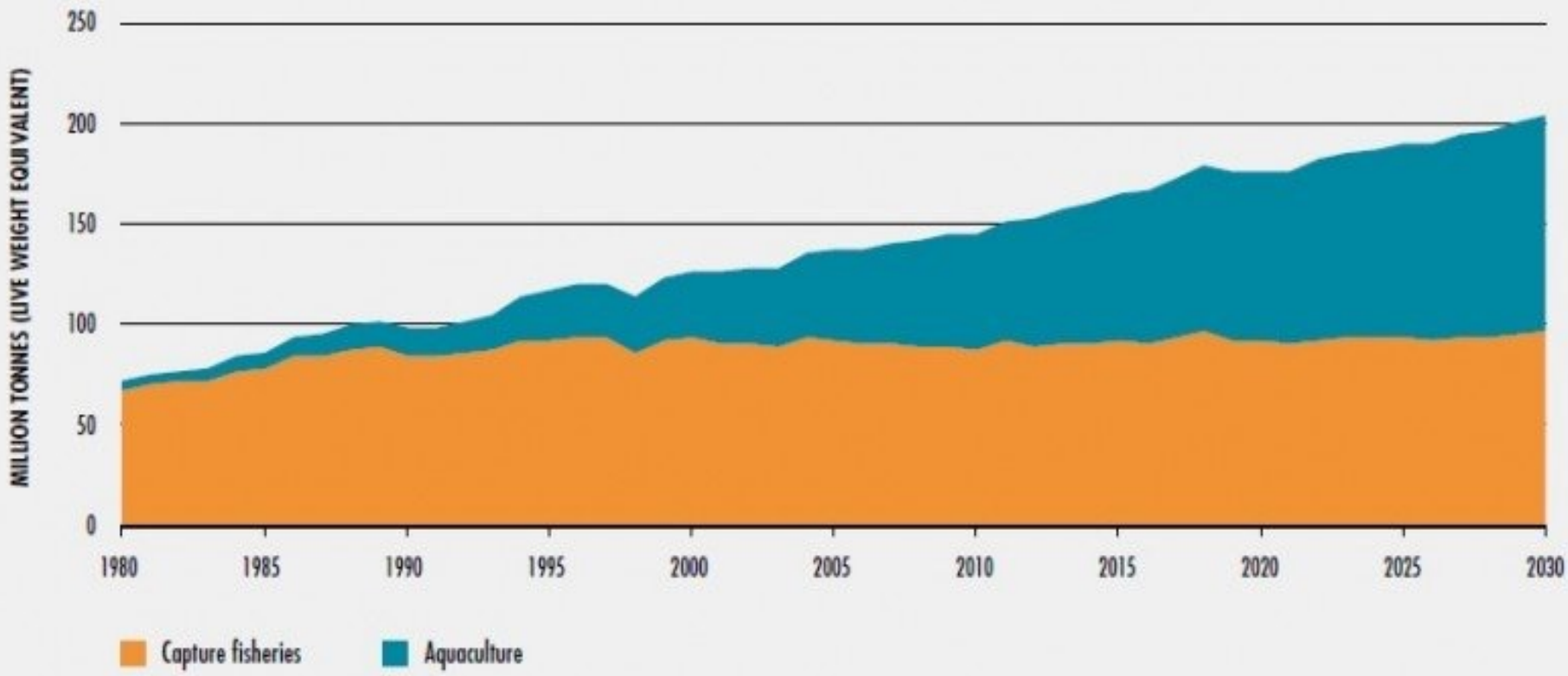
Source: USDA/FAS PS&D

Trade

Why?

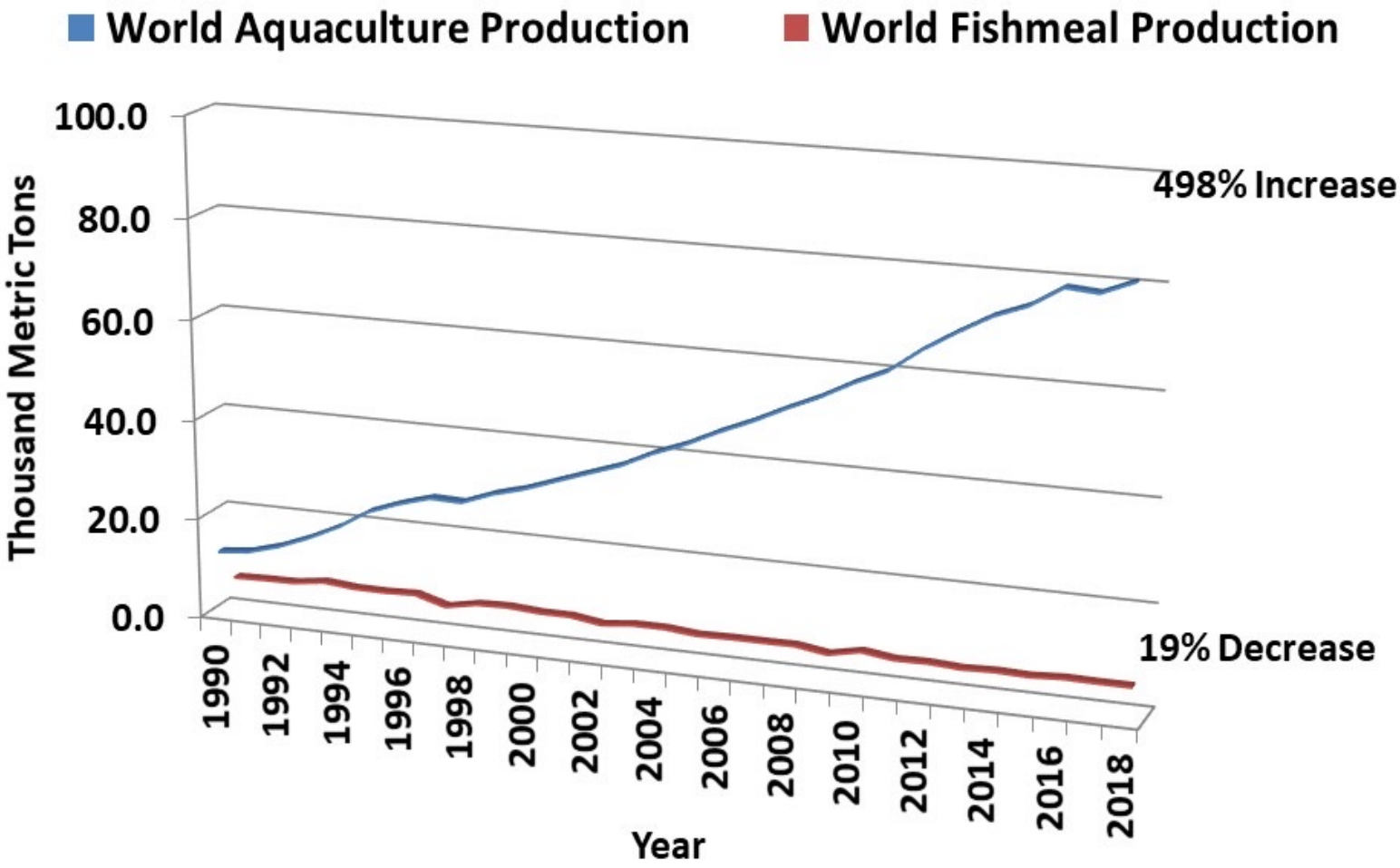
Country Population	%Arable Land	%Global
China	6.89%	18.5%
Indonesia	2.57%	3.51%
Vietnam	.43%	1.25%
Brazil	4.65%	2.73%
US	10.49%	4.25%

FIGURE 51
WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION, 1980–2030



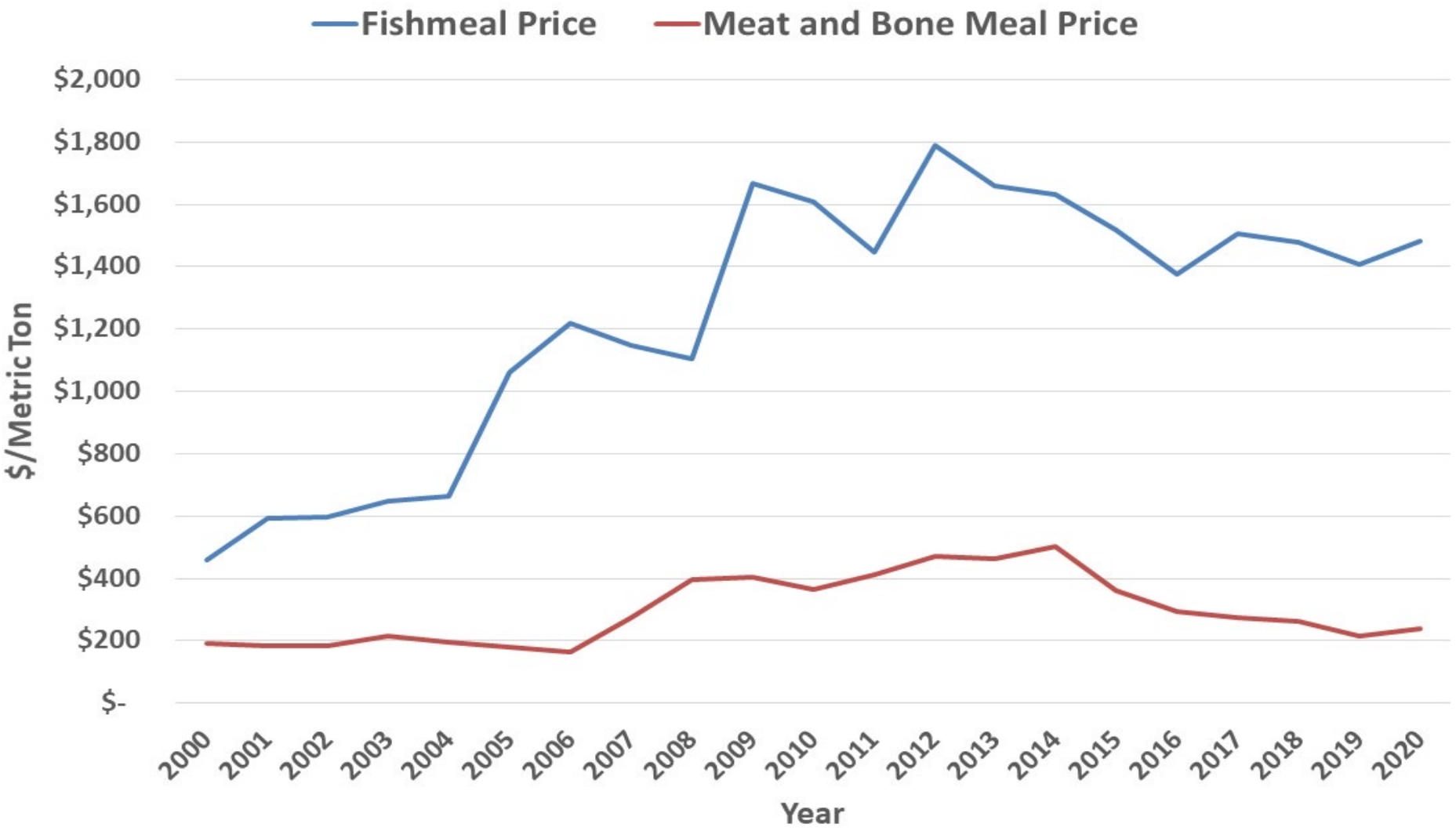
SOURCE: FAO.

World Aquaculture and Fishmeal Production (1990-2018)



Source: USDA; FAO

Annual Fishmeal and Ruminant Meat and Bone Meal Price 2000-2020



Source: The Jacobsen Report
USDA/FAS Oilseeds: World Markets and Trade

Top 10 Exporters of Rendered Animal Protein Meals, 2010-2021

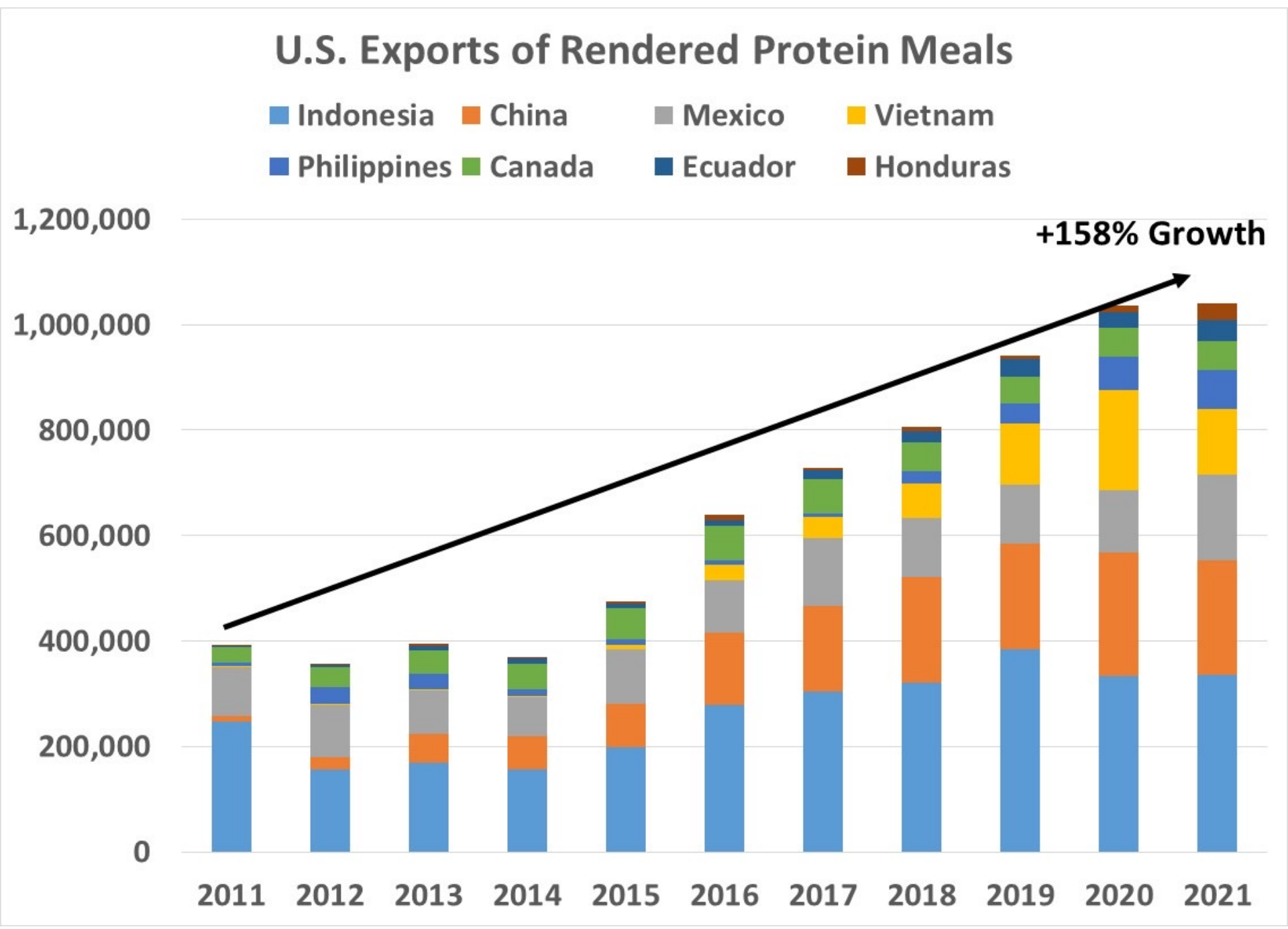
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
EU 27 External	751,414	803,784	699,709	752,395	815,192	934,775	948,750	1,184,829	1,143,969	1,125,557	1,136,652
United States	425,061	431,661	521,094	441,871	563,352	706,652	806,838	897,701	1,046,761	1,106,444	1,098,447
Australia	249,513	293,187	334,534	338,911	346,205	276,677	268,401	320,300	276,675	239,573	365,306
United Kingdom	198,040	233,479	239,394	268,852	195,703	205,022	183,983	215,781	270,149	232,710	221,520
Brazil	36,930	84,011	93,985	98,388	110,477	112,935	136,249	168,000	170,582	166,554	178,541
New Zealand	133,211	135,447	122,379	127,266	132,108	147,990	150,003	156,956	135,598	136,713	141,388
Argentina	5,940	11,010	29,407	36,928	40,177	53,870	75,541	83,713	86,873	92,590	70,857
Canada	49,478	59,648	72,358	61,046	33,137	37,980	25,148	33,547	77,322	88,762	106,752
Paraguay	16,236	23,377	36,369	47,218	45,186	47,556	46,647	42,900	42,869	49,311	51,649
Norway	20,885	19,267	21,767	25,910	24,465	27,951	27,830	29,965	31,415	35,125	38,468
TOTAL	1,976,641	2,194,416	2,322,923	2,341,867	2,470,132	2,710,216	2,826,975	3,283,960	3,437,224	3,884,303	3,595,936

Source: Trade Data Monitor

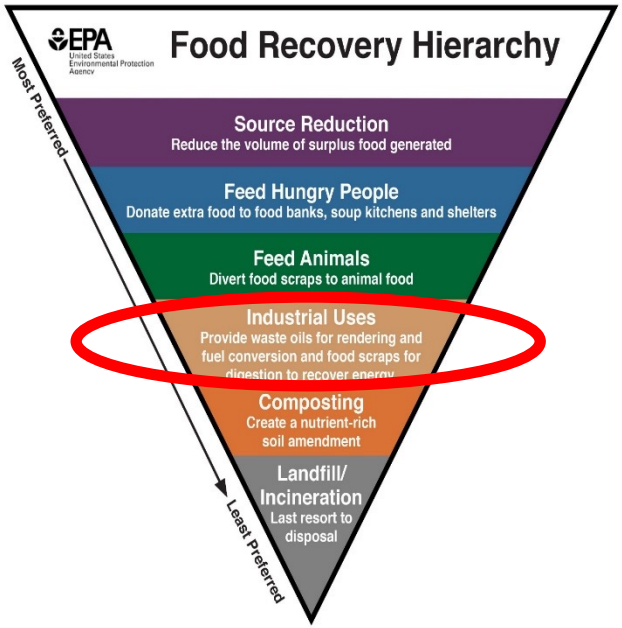
Top 10 Importers of Rendered Animal Protein Meals, 2011-2021

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Vietnam	176,309	273,443	281,131	294,733	291,322	393,807	293,534	423,800	550,226	731,984	601,409
Indonesia	423,768	419,638	450,927	392,015	396,635	477,562	462,587	502,177	512,658	470,046	500,505
China	86,143	64,238	92,106	113,564	136,094	130,431	152,313	177,895	253,055	305,101	228,384
Thailand	297,125	334,267	268,650	260,576	250,088	274,787	325,297	293,363	288,610	249,121	250,660
Singapore	4,413	6,212	10,204	5,994	8,562	13,816	32,675	150,606	148,492	154,268	181,983
Chile	58,978	107,231	142,046	133,223	132,182	90,501	159,010	173,004	186,389	130,288	171,102
Philippines	59,680	106,515	99,626	95,495	98,020	82,832	59,560	110,108	105,730	127,135	136,382
United States	77,027	70,369	73,757	69,582	64,142	82,217	83,636	108,901	117,402	113,980	92,464
Mexico	92,168	99,043	83,474	74,874	103,789	99,618	129,392	112,376	112,152	116,606	148,153
Myanmar	-	101	275	6,022	5,614	1,796	23,987	64,153	88,880	84,594	56,936
TOTAL	1,976,641	2,194,416	2,322,923	2,341,867	2,470,132	2,710,216	2,826,975	3,283,960	3,437,224	3,884,303	3,595,936

Source: Trade Data Monitor


U.S. Exports of Rendered Protein Meals
Indonesia
China
Mexico
Vietnam
Philippines
Canada
Ecuador
Honduras
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
+158% Growth
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021

Industrial Uses



Renewable Fuel Programs

- **Renewable Fuel Standard (RFS) - US**
  - **RFS sets fuel volumes**
- **Low Carbon Fuel Standard - California**
  - **LCFS sets carbon volumes**
- **EU Renewable Energy Directive (RED)**
- **Brazil - RenovaBio**

EU Renewable Energy Directive (RED)

Biofuel Production Pathway	Greenhouse Gas Emission Savings
Rape Seed Biodiesel	38%
Soybean Biodiesel	31%
Palm Oil Biodiesel	19%
Palm Oil Biodiesel with Methane Capture at Oil Mill	56%
Waste Vegetable or Animal Oil Biodiesel	83%

California Low Carbon Fuel Standard (LCFS) Carbon Intensity (CI) Scores (gCO2e/MJ)

California Low Carbon Fuel Stanard (LCFS) Carbon Intensity Scores (gCO2e/MJ)				
Biodiesel Feedstock			**Renewable Diesel Feedstock**	
North America			**North America**	
Tallow	34.46		Tallow	36.29
Used Cooking Oil (UCO)	20.16		Used Cooking Oil (UCO)	20.84
Distillers Corn Oil	29.55		Distillers Corn Oil	32.80
Soy Oil	54.23		Soy Oil	55.22
Canola Oil	53.36		**Singapore**	
			Tallow	36.22
			UCO Global	21.25
			UCO Asian	16.89

Source: California Air Resources Board (CARB); https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities

What does this mean?

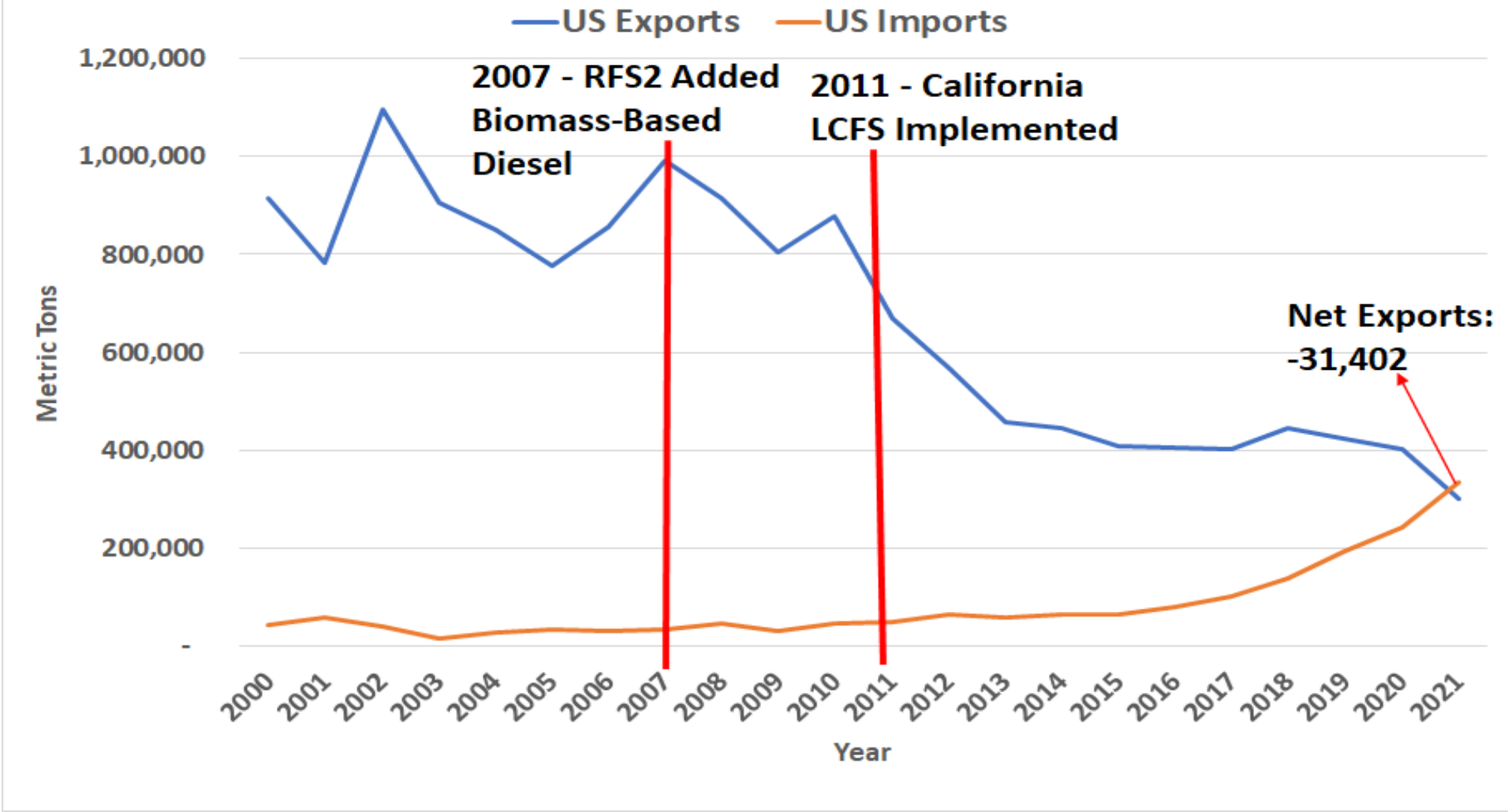
U.S. Production & Use of Rendered Fat; Year to Date (YTD) 2021			
	YTD November 21 (Metric Tons)		
Product	Production	Consumption in Biofuel	Percent of Production
Poultry Fat	882,951	130,379	15%
Tallow	2,653,790	532,063	20%
White Grease	627,822	291,557	46%
Yellow Grease	922,058	1,368,416	148%
Other	208,567	35,675	17%
TOTAL	5,295,188	2,358,090	45%
* Does not include imports			

Source: Energy Information Agency, Monthly Biofuels Capacity and Feedstocks Update
USDA, National Agricultural Statistics Service, Fats and Oils: Oilseed Crushings, Production, Consumption and Stocks

1960’s

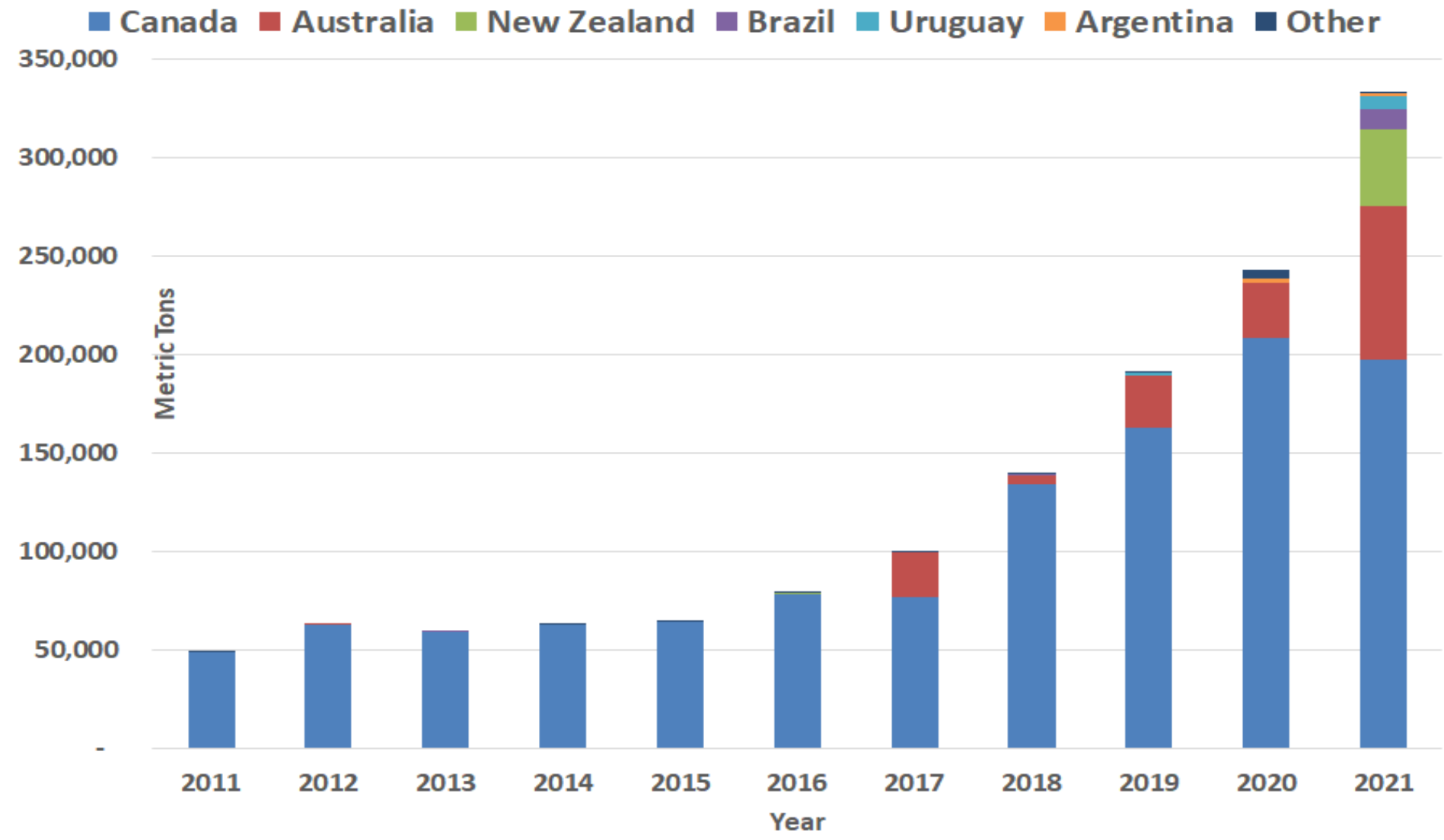

サンアルファC
お洗たくには……肌にやさしい
ロケット
粉せっけん
せっけんカスができません
赤ちゃんの肌着にも最適です
生地にやさしく布が傷はみません
素晴らしい洗浄効果を発揮します
ニチゴー
せっけん
改良タイプ

US Exports and Imports of Tallow (Annual)



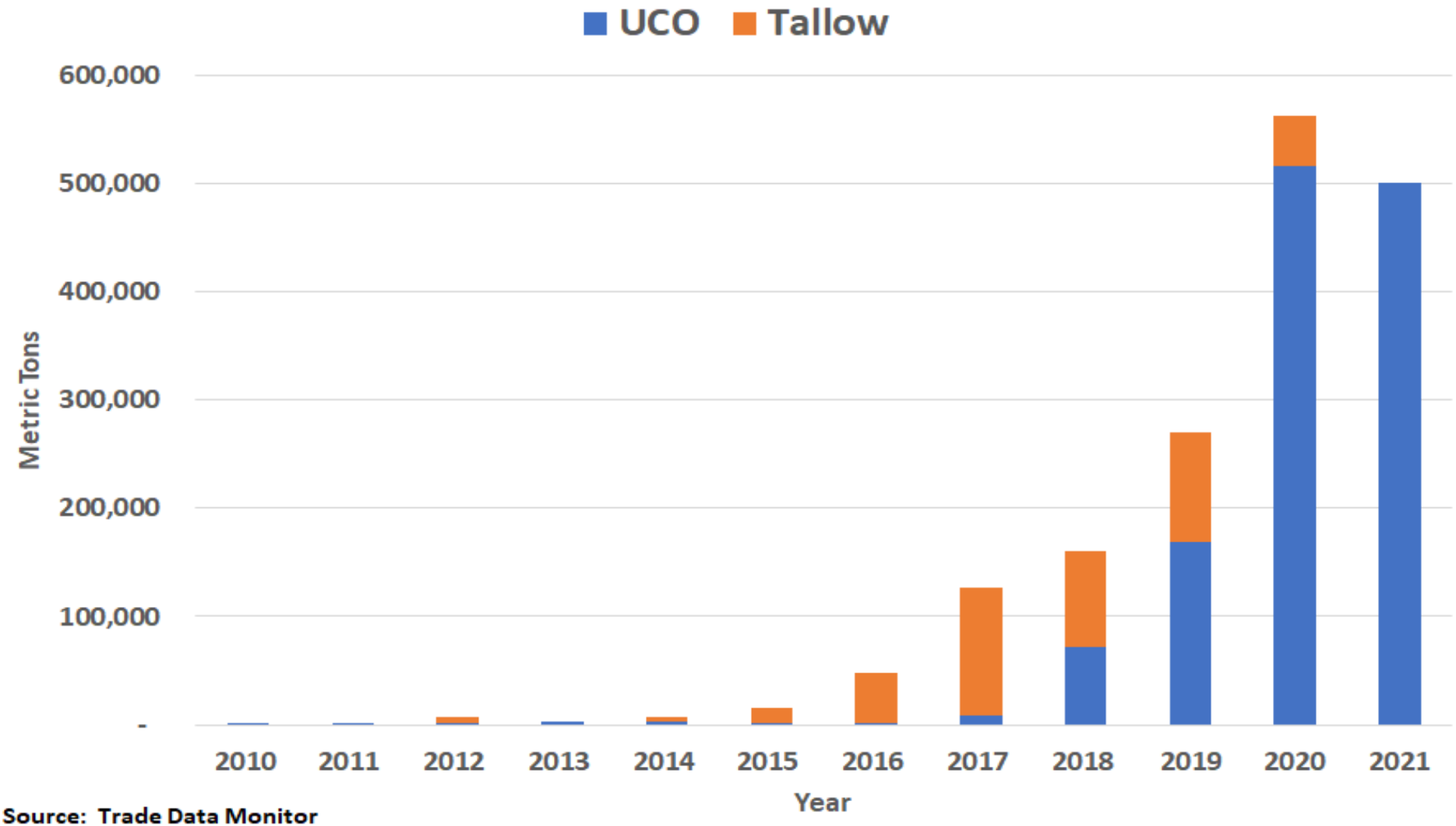
Source: Trade Data Monitor

U.S. Imports of Tallow (Annual)



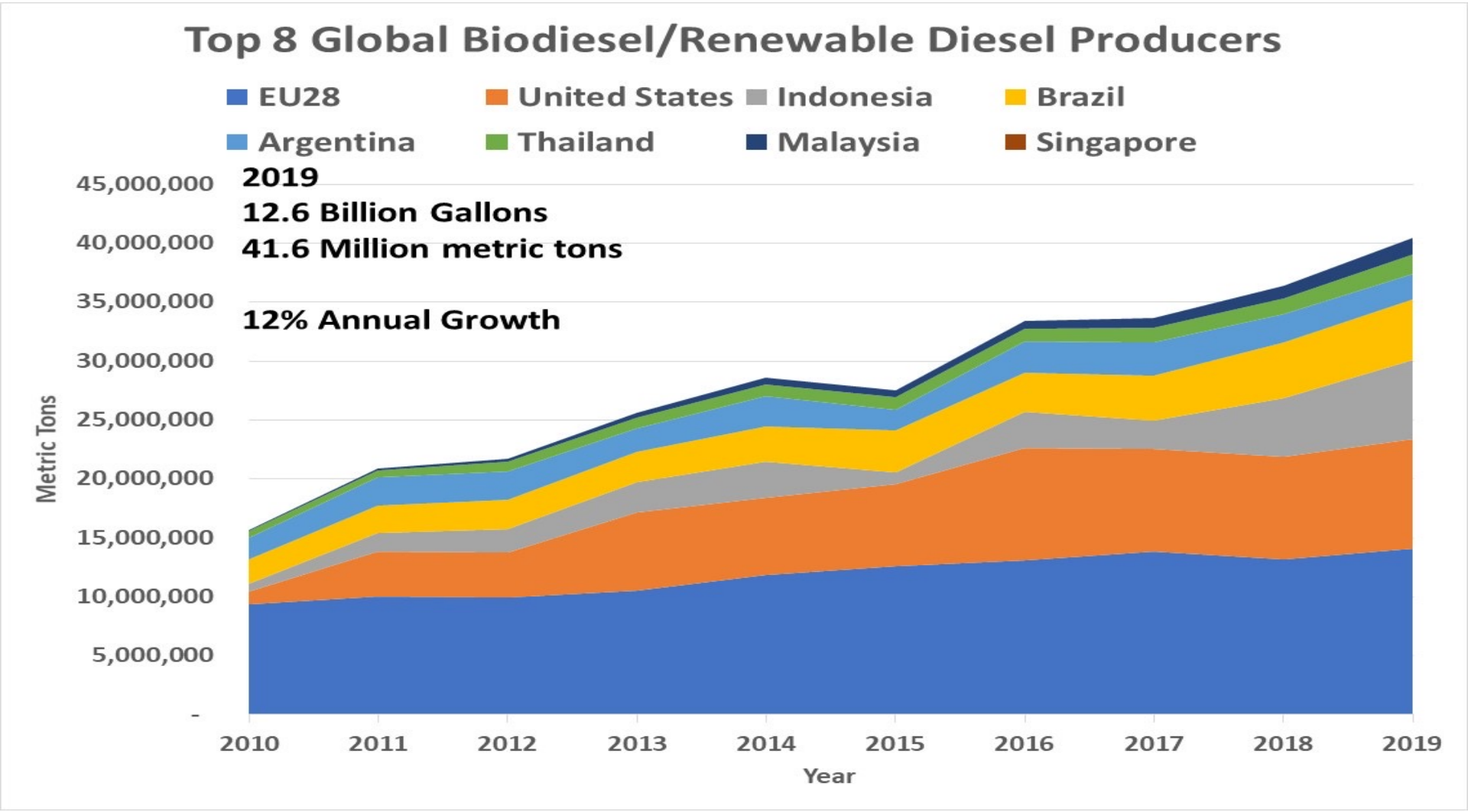
Source: Trade Data Monitor

U.S. Exports of Tallow and Used Cooking Oil (UCO) to Singapore for Renewable Diesel Production



Source: Trade Data Monitor

What does this mean, globally?




TAKE ACTION
TODAY!
Tell Congress to Feed
People & Pets First
pet food institute

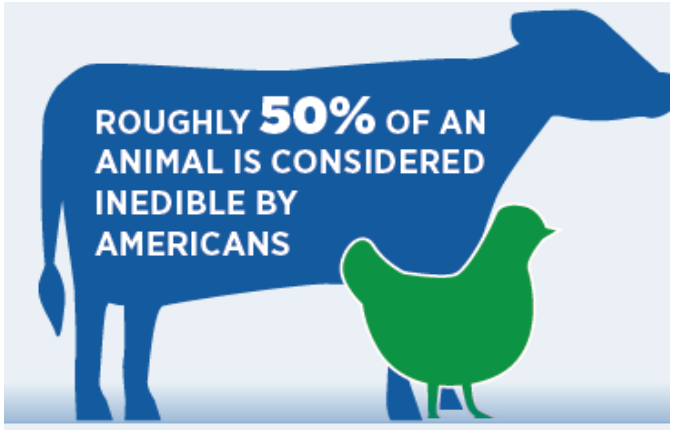
Sustainability

UN Definition - 1987

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Source: United Nation's World Commission on Environment and Development (the Brundtland Commission), 1987.

The Original Recyclers



Grocery Stores generate

Super Foods

1.92 BILLION POUNDS

of scraps, fat, bone, expired meat & used cooking oil annually

Renderers collect

4.4 BILLION POUNDS

of used cooking oil per year in the U.S. and Canada

RENDERING RECLAIMS AND PROTECTS

3.7 billion gallons of water that would otherwise be wasted are reclaimed during rendering, cleaned, and returned to rivers and streams. Rendering also improves water quality by reducing grease and oil that clog sewer and wastewater systems.

WATER

RENDERING COMBATS CLIMATE CHANGE

Rendering protects the environment from high greenhouse gas emissions of other disposal methods. It reduces the environmental impacts of animal agriculture by sequestering 5 times more greenhouse gases than are produced.

This is equal to removing **18.5 million** cars off the road each year.

If all renderable products were sent to landfills, all available space would be gone in **4 years.**

FEEDING THE FUTURE

Rendering helps grow the next generation of food by "recycling" unwanted meat into new and clean ingredients for animal food and fertilizer.

NARA

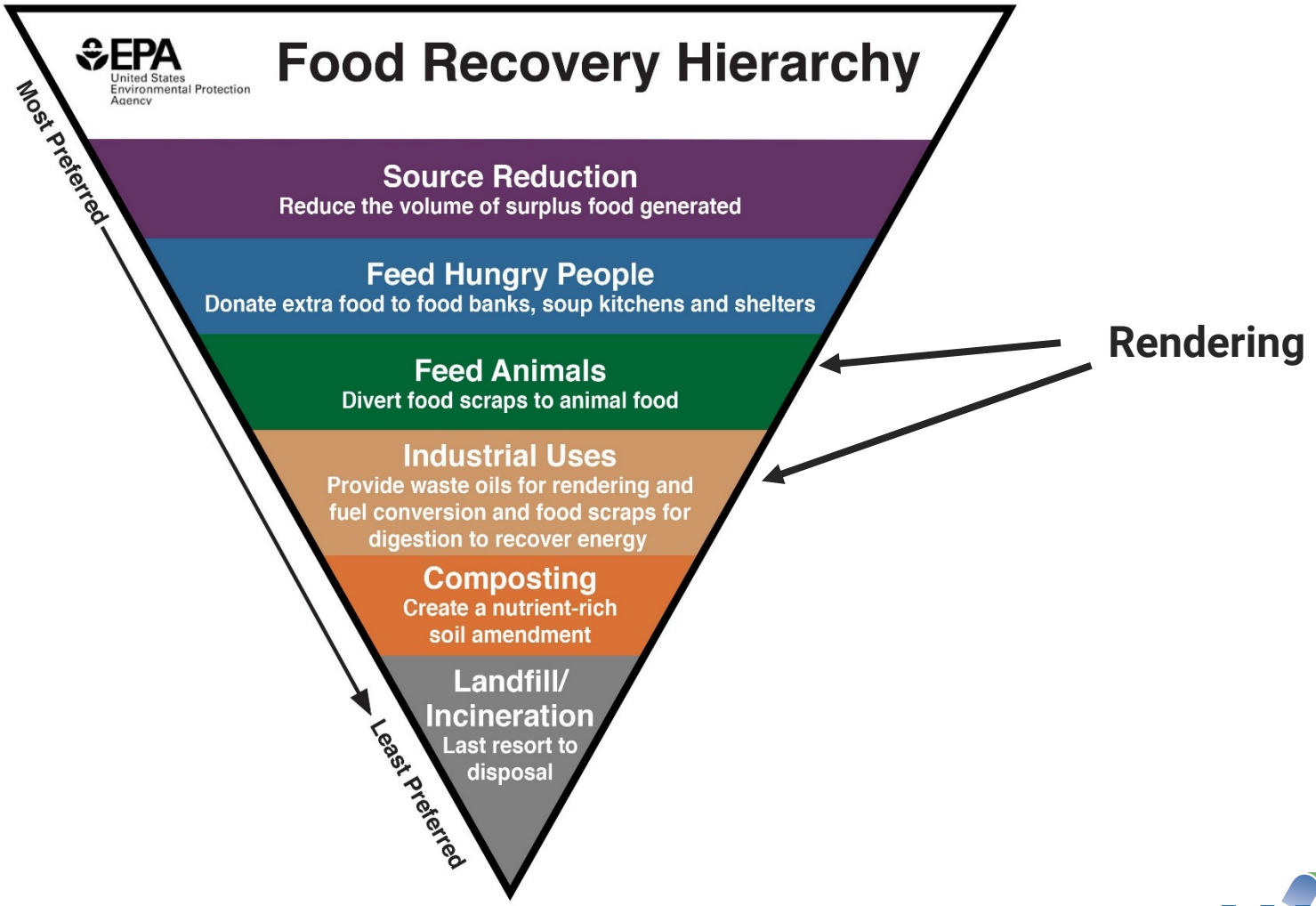
Rendering reduces Greenhouse Gas Emissions (GHG)

- ✓ **Rendering reduces GHG emissions by 72% and fossil fuel use by 80%** (when compared to petroleum diesel)

- ✓ An average rendering plant sequesters **5 times** more greenhouse gas (GHG) emissions from the environment (such as carbon dioxide) than it emits. Some are even more efficient than that

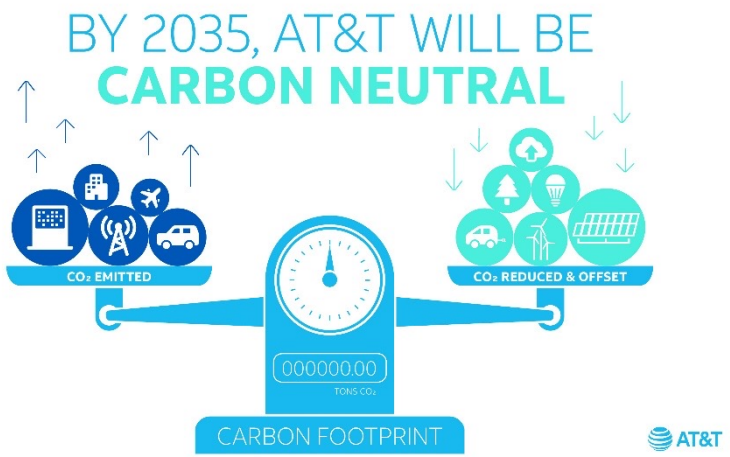
- ✓ Rendering avoids at least **90%** of the potential GHG emissions compared with industrial composting

EPA Food Recovery Hierarchy

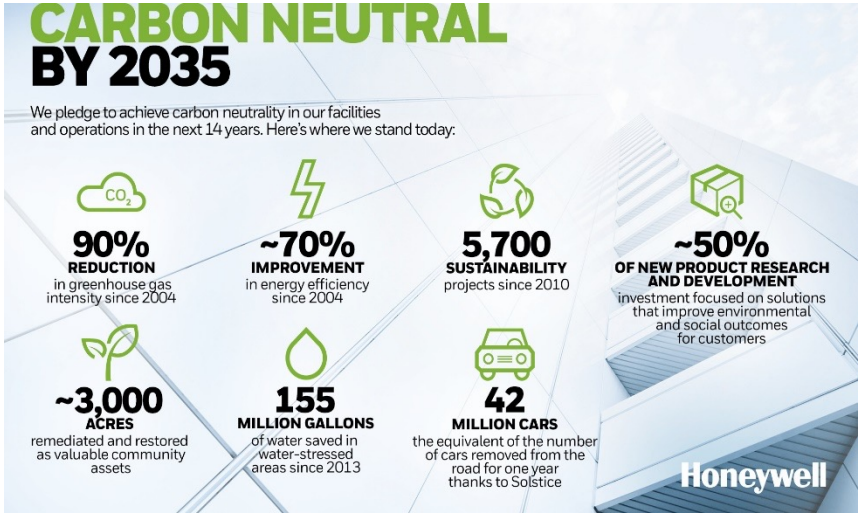


Source: https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy

Future


BY 2035, AT&T WILL BE
CARBON NEUTRAL
CO₂ EMITTED
CO₂ REDUCED & OFFSET
000000.00
TONS CO₂
CARBON FOOTPRINT
AT&T

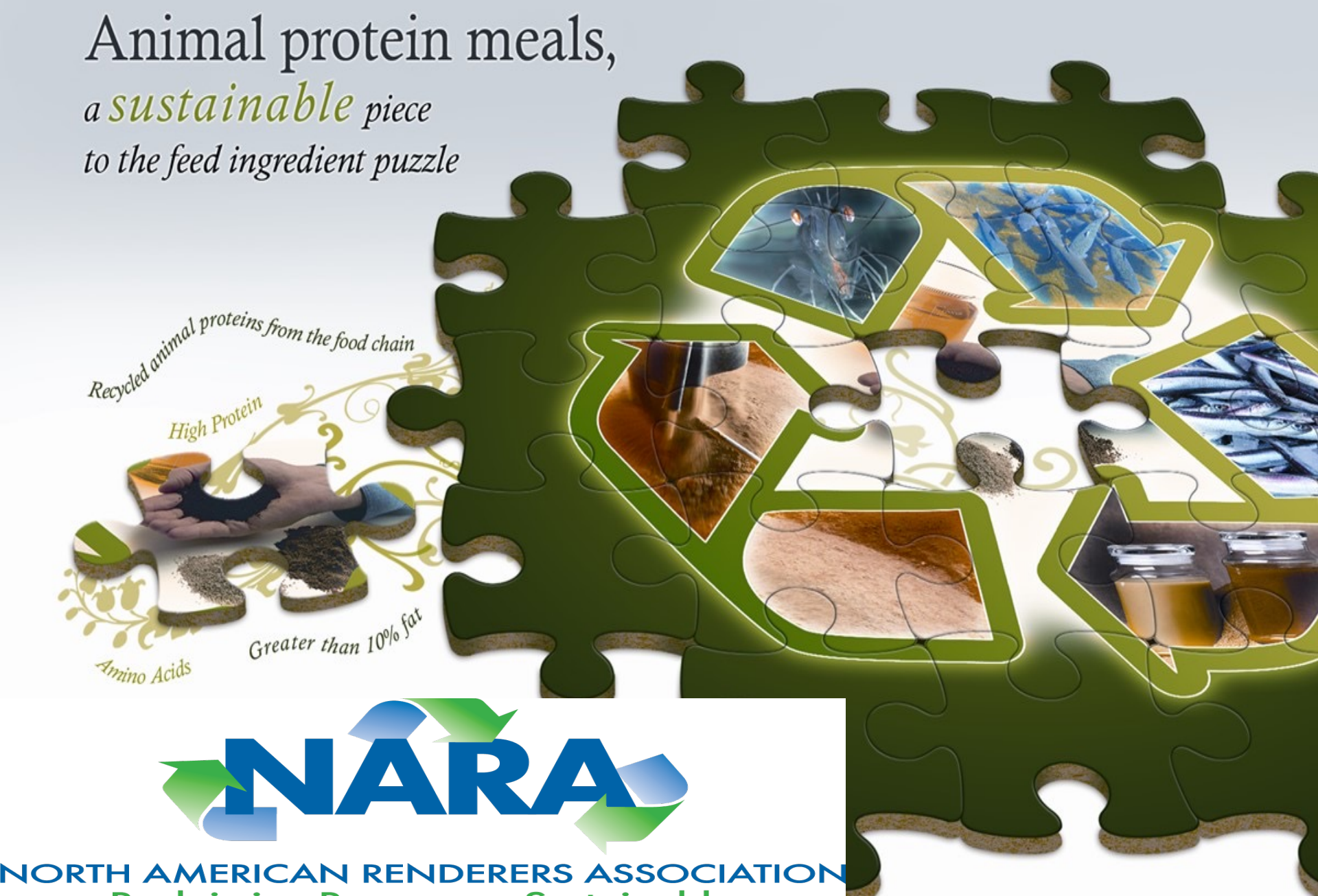

CARBON NEUTRAL
CO2
NEUTRAL
CARBON NEUTRAL
CARBON NEUTRAL


CARBON NEUTRAL
BY 2035
We pledge to achieve carbon neutrality in our facilities and operations in the next 14 years. Here's where we stand today:
90%
REDUCTION
in greenhouse gas intensity since 2004
~70%
IMPROVEMENT
in energy efficiency since 2004
5,700
SUSTAINABILITY
projects since 2010
~50%
OF NEW PRODUCT RESEARCH AND DEVELOPMENT
investment focused on solutions that improve environmental and social outcomes for customers
~3,000
ACRES
remediated and restored as valuable community assets
155
MILLION GALLONS
of water saved in water-stressed areas since 2013
42
MILLION CARS
the equivalent of the number of cars removed from the road for one year thanks to Solstice
Honeywell


Go Carbon Neutral

NARA

Questions/Comments?



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