

Applications of RSEI Data for Assessment of Corporate Environmental Performance

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Inventory and Environmental Conditions in Communities

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Corporate Toxics Information Project



Which corporations are releasing the most toxins into our air and water?

Which communities are most affected

Purpose: engender public participation in environmental decision-making

Online at <http://peri.umass.edu/ctip>

USEPA' s RSEI Project

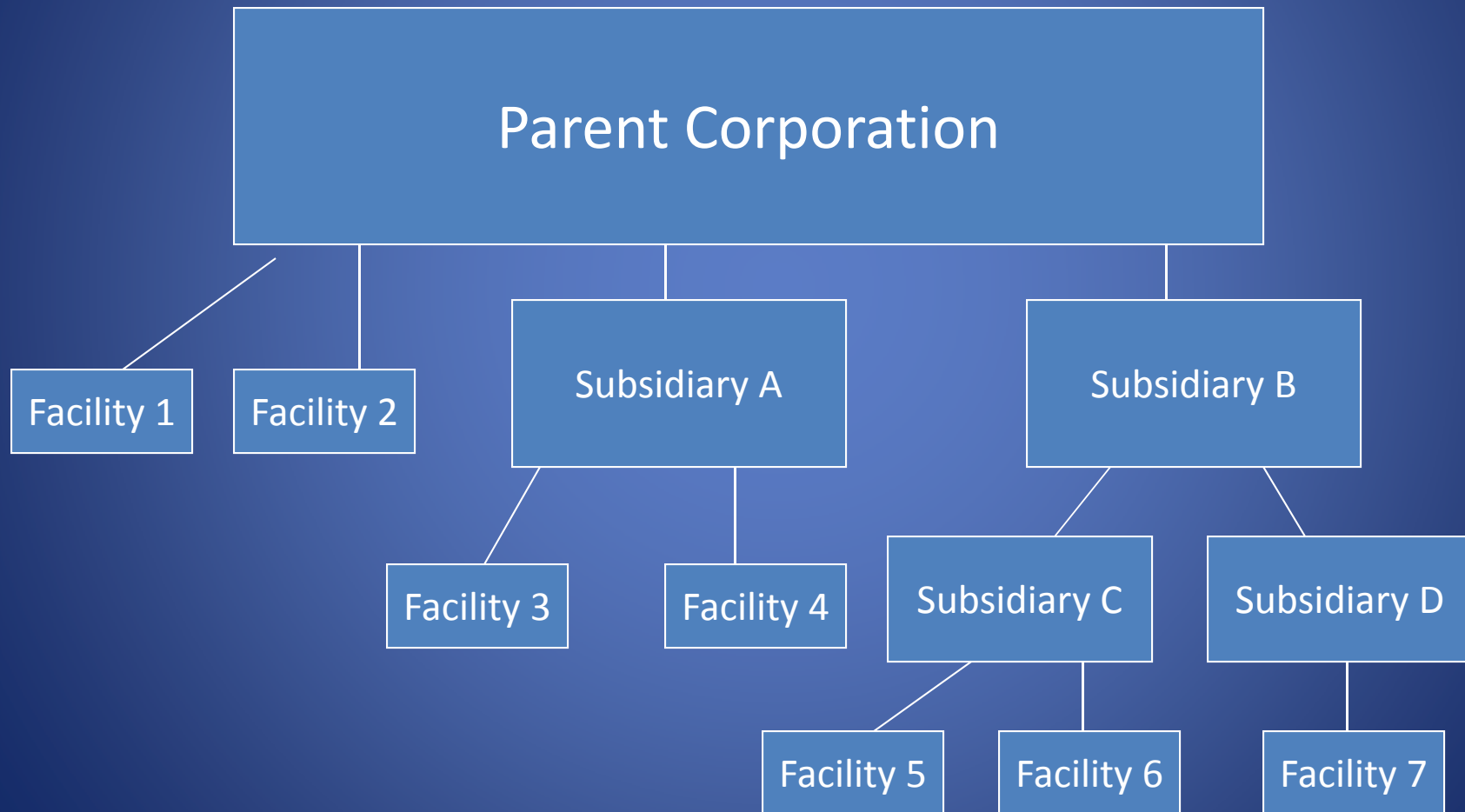
Develops risk scores for facilities based on:

- *mass (pounds) of TRI releases*
- *chemical toxicity weights*
- *fate-and-transport modeling*
- *population density in impacted localities*

Online at <https://www.epa.gov/rsei>

The Toxic 100:

Measuring corporate environmental performance



Example from Toxic 100 Air Polluters

August 2013

E.I. du Pont de Nemours

Rank in Toxic 100: 1
 Rank among all TRI companies: 6
 Air releases 2010 (lbs): 10,941,822
 Incineration transfers 2010 (lbs): 22,013,519
 Total Air and Incineration Toxic Score 2010: 7,086,303
 Percentage of national total 2010 toxic air and incineration score: 1.830%
 EJ: Poor Share: 21.4%
 EJ: Minority Share: 59.9%

Facilities displayed below: (display chemicals at facilities)
 (display chemicals)
 Basic data displayed (display advanced data instead)
 (Click on column headers to re-sort table: current sort is by percent of total company score.)
 (Links on facility names lead to full TRI reports. Links on cities lead to Mapquest maps.)

Facility Name	City	State	Air releases (lbs)	Incineration transfers (lbs)	Toxic Score (quantity x exposure x toxicity x population)	Percent of total company score	EJ: Poor Share	EJ: Minority Share	Rv
DUPONT PERFORMANCE ELASTOMERS LLC PONTCHARTRAIN SITE	LA PLACE	LA	347,143	372,076	6,620,185	93.42%	21.6%	61.5%	
DUPONT SABINE RIVER WORKS	ORANGE	TX	1,733,291	45,488	96,549	1.36%	16.8%	26.7%	**
DUPONT SPRUANCE PLANT	RICHMOND	VA	134,729	92,892	69,473	0.98%	21.5%	62.5%	

US population

Poor share Minority share

12.9% 31.8%

Details of methodology for EJ performance measurement

Corporate Social Responsibility and Environmental Management
Corp. Soc. Responsib. Environ. Mgmt. 18, 61–79 (2011)
Published online 4 May 2010 in Wiley Online Library
(wileyonlinelibrary.com) DOI: 10.1002/csr.238

Measuring Corporate Environmental Justice Performance

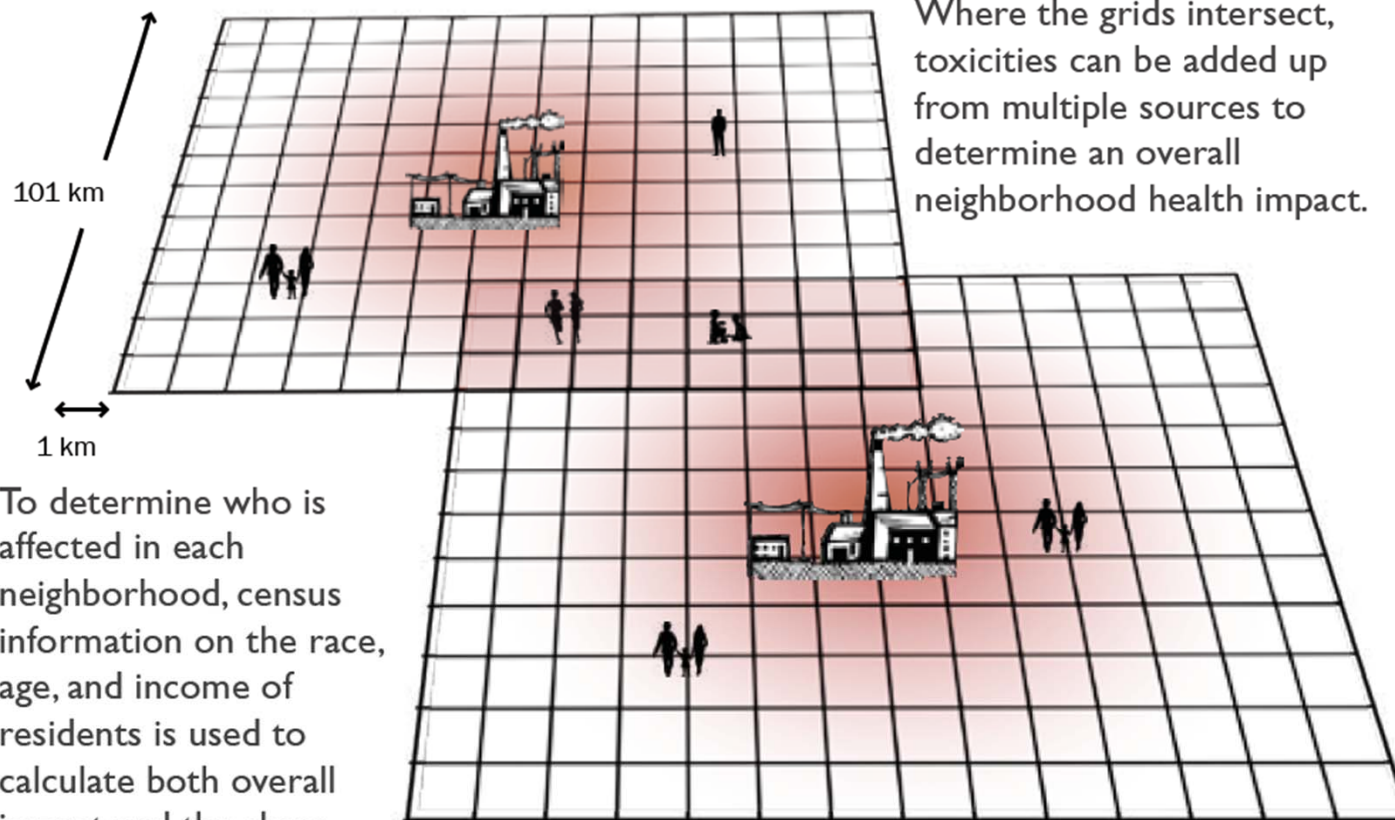
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Mapping the riskscape using RSEI geographic microdata

RSEI takes the toxic air release from each industrial source and uses wind and other information to determine where the releases go within a grid around each facility. RSEI attributes higher health impacts to grid cells exposed to higher-toxicity chemicals.



To determine who is affected in each neighborhood, census information on the race, age, and income of residents is used to calculate both overall impact and the share of the impact for various sub-groups, including low-income and minority residents.



The Smokestack Effect

Toxic Air and America's Schools

USA TODAY used an EPA model to track the path of industrial pollution and mapped the locations of almost 128,000 schools to determine the levels of toxic chemicals outside. The potential problems that emerged were widespread, insidious and largely unaddressed.



Photo by Garrett Hubbard, USA TODAY

Find your school

* required

Methodology

Q and A

Most polluted schools by state

Latest Stories

Schools near industry face chemical peril

The exposure to toxic chemicals in the air outside some schools appears so high that students could be at risk of suffering a range of ailments, from asthma to cancer.



Latest Multimedia

Video: Toxic chemicals outside our schools

USA TODAY examines the impact of industrial pollution outside the nation's schools and explores how toxic chemicals shuttered one elementary school in Addyston, Ohio, three years ago.



'Weird' smell set off investigation at Ohio school

Schools that ranked worst

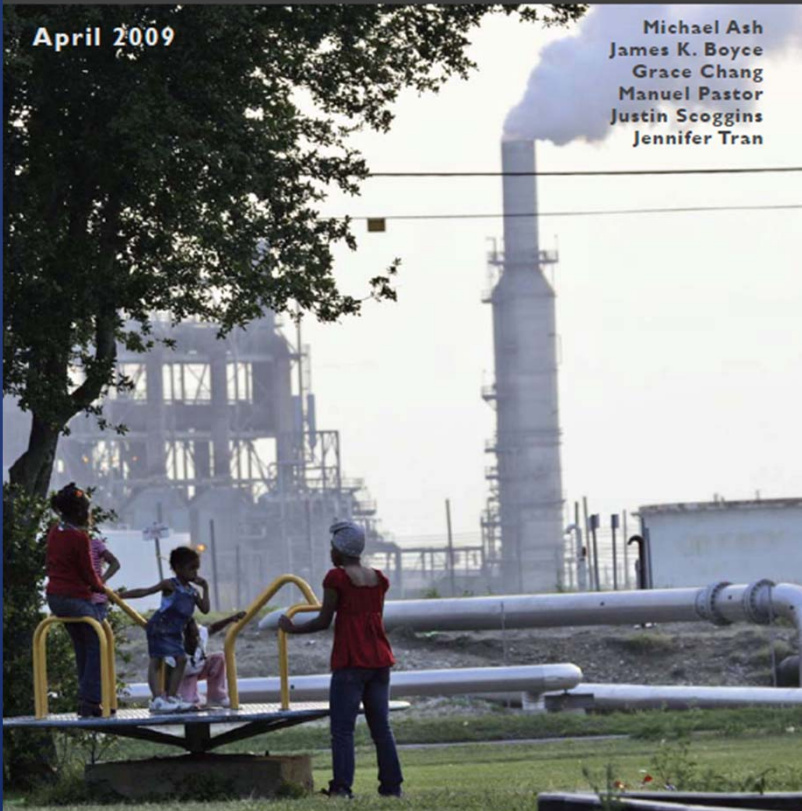
USA Today series on "Toxic Air and America's Schools," December 2008

JUSTICE IN THE AIR

Tracking Toxic Pollution from America's Industries and
Companies to our States, Cities, and Neighborhoods

April 2009

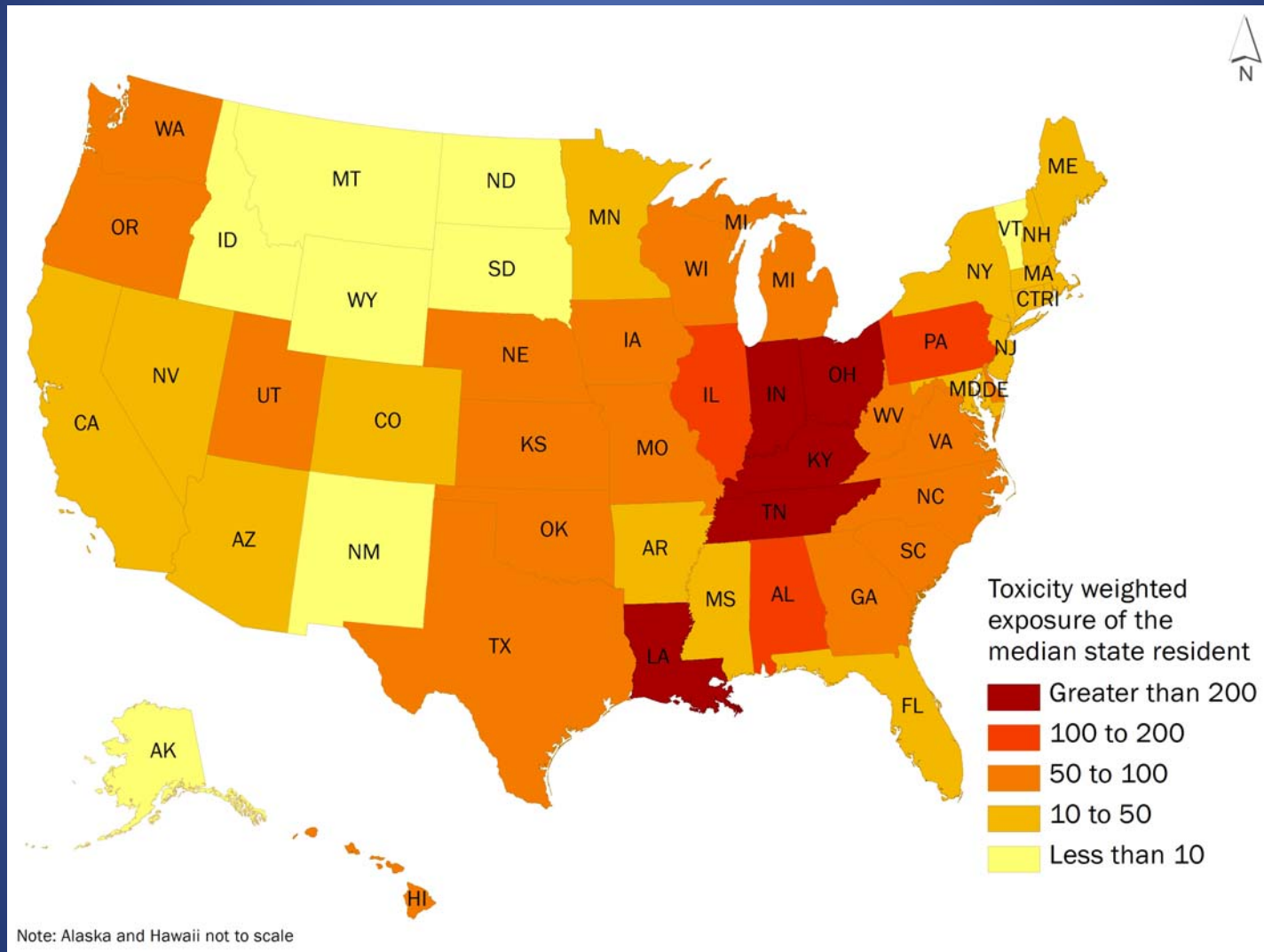
Michael Ash
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Justin Scoggins
Jennifer Tran



Justice in the Air (April 2009)

- Collaboration among researchers at UMass-Amherst & University of Southern California
- Based on RSEI data
- Exposure and EJ mapping by state, metro area, industrial sector, firm and facility

MEDIAN EXPOSURE TO AIR TOXICS BY STATE



Source: *Justice in the Air* (2009)

DISPROPORTIONATE IMPACTS BY METRO AREA

Metropolitan area	Minority share of toxic score	Minority share of population	Minority discrepancy
Birmingham, AL MSA	64.7	33.5	31.1
Baton Rouge, LA MSA	63.6	36.1	27.5
Memphis, TN--AR--MS MSA	70.6	48.1	22.5
Chicago, IL PMSA	61.2	42.0	19.2
Harrisburg--Lebanon--Carlisle, PA MSA	32.2	13.5	18.7
Louisville, KY--IN MSA	36.5	18.0	18.5
Gary, IN PMSA	50.0	32.1	17.9
San Diego, CA MSA	62.7	45.1	17.6
Milwaukee--Waukesha, WI PMSA	43.0	25.5	17.5
Tacoma, WA PMSA	41.1	24.0	17.1

Source: *Justice in the Air* (2009)

TOP TEN SECTORS BY TOXIC SCORE

Sector (3-digit SIC code in parentheses)	Toxic score	Minority share	Low-income Share
Steel Works, Blast Furnaces, Rolling and Finishing Mills (331)	1,054	24.1	17.2
Iron and Steel Foundries (332)	939	41.3	16.6
Electric Services (491)	736	40.3	17.9
Industrial Organic Chemicals (286)	615	39.1	14.2
Plastics and Synthetic Materials (282)	437	30.0	15.5
Motor Vehicles and Motor Vehicle Equipment (371)	416	25.2	12.0
Industrial Inorganic Chemicals (281)	401	33.1	15.8
Fabricated Structural Metal Products (344)	393	33.7	15.3
Petroleum Refining (291)	381	51.3	19.0
Fabricated Metal Products (349)	371	54.4	16.3
Top ten total	5,741	37.3	16.0
Total (all sectors)	10,000	34.8	15.3

Source: *Justice in the Air* (2009)

MINORITY & LOW-INCOME SHARES OF HEALTH RISK

Minority & low-income shares of health risk from industrial air toxics from oil refining

	Facilities	Releases	Toxic score	Minority share	Black share	Latino share	Asian-American share	Native American share	Low-income share
ExxonMobil	8	564	79.1	65.5	51.9	10.2	2.4	0.3	24.6
ConocoPhillips	17	790	62.1	34.8	19.6	10.6	2.3	0.9	15.4
Valero Energy	17	1,031	57.2	59.8	38.6	18.3	1.8	0.5	19.7
BP	6	386	33.5	56.2	16.4	32.6	5.8	0.6	16.3
Citgo Petroleum Corp.	7	314	20.1	47.8	28.5	15.7	2.3	0.4	19.4
Pasadena Refining System Inc.	1	36	17.3	73.6	12.6	57.7	2.4	0.6	25.1
Sunoco	5	176	17.1	34.0	22.9	5.8	3.8	0.3	16.3
Tesoro	6	315	16.9	24.5	2.6	11.6	5.9	1.8	10.0
Suncor Energy	1	35	14.0	45.3	6.9	33.6	2.5	1.3	12.9
Motiva Enterprises L.L.C.	5	173	10.1	42.2	35.6	4.1	1.4	0.3	16.8
Hess	2	110	8.6	67.4	14.6	49.8	4.9	0.3	26.9
Sinclair Oil Corp.	3	171	8.5	35.3	18.2	6.8	1.1	5.3	20.3
Royal Dutch Shell	6	291	7.8	43.5	8.8	25.5	6.0	1.0	12.2
Marathon Oil	7	364	7.7	33.8	16.3	13.6	1.9	0.6	14.3
Chevron	7	432	3.8	66.2	17.4	31.9	13.3	0.6	18.9
All Oil Refining	163	6,836	380.9	51.3	27.9	18.8	2.9	0.7	19.0
All Firms	102,636	16,470	10,000	34.8	18.1	12.6	2.2	0.6	15.3
US Population	-	-	-	31.8	11.8	13.7	3.7	0.7	12.9

Source: *Justice in the Air* (2009)

EXXONMOBIL FACILITIES

Minority and low-income shares of health risk from industrial air toxics



	Toxic score	Minority share	Black share	Latino share	Asian-American share	Native American share	Low-income share
Baton Rouge Refinery (LA)	42.7	78.0	75.3	1.1	1.0	0.1	31.1
Baton Rouge Chemical (LA)	17.0	73.1	70.0	1.2	1.1	0.1	29.1
Baytown Refinery (TX)	12.6	54.6	15.0	35.8	2.6	0.5	15.3
Torrance Refinery (CA)	4.6	69.9	10.8	40.9	15.5	0.7	15.1
Joliet Refinery (IL)	4.3	33.7	16.5	13.0	2.9	0.2	7.8
50 additional facilities	7.1	50.8	23.2	23.4	2.6	0.8	17.3
All Facilities	88.3	69.1	55.5	10.4	2.2	0.3	25.4

Source: *Justice in the Air* (2009)



Thank you.