

# Progress in HEI's Scientific Activities

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# 2014-2015

- A Year of Transition
- Completion of Strategic Plan 2010-2015
- Formulation of Strategic Plan 2015-2020
  - with important scientific developments and policy challenges in mind
  - With extensive input and consultations with sponsors, HEI committees and board, and other scientists

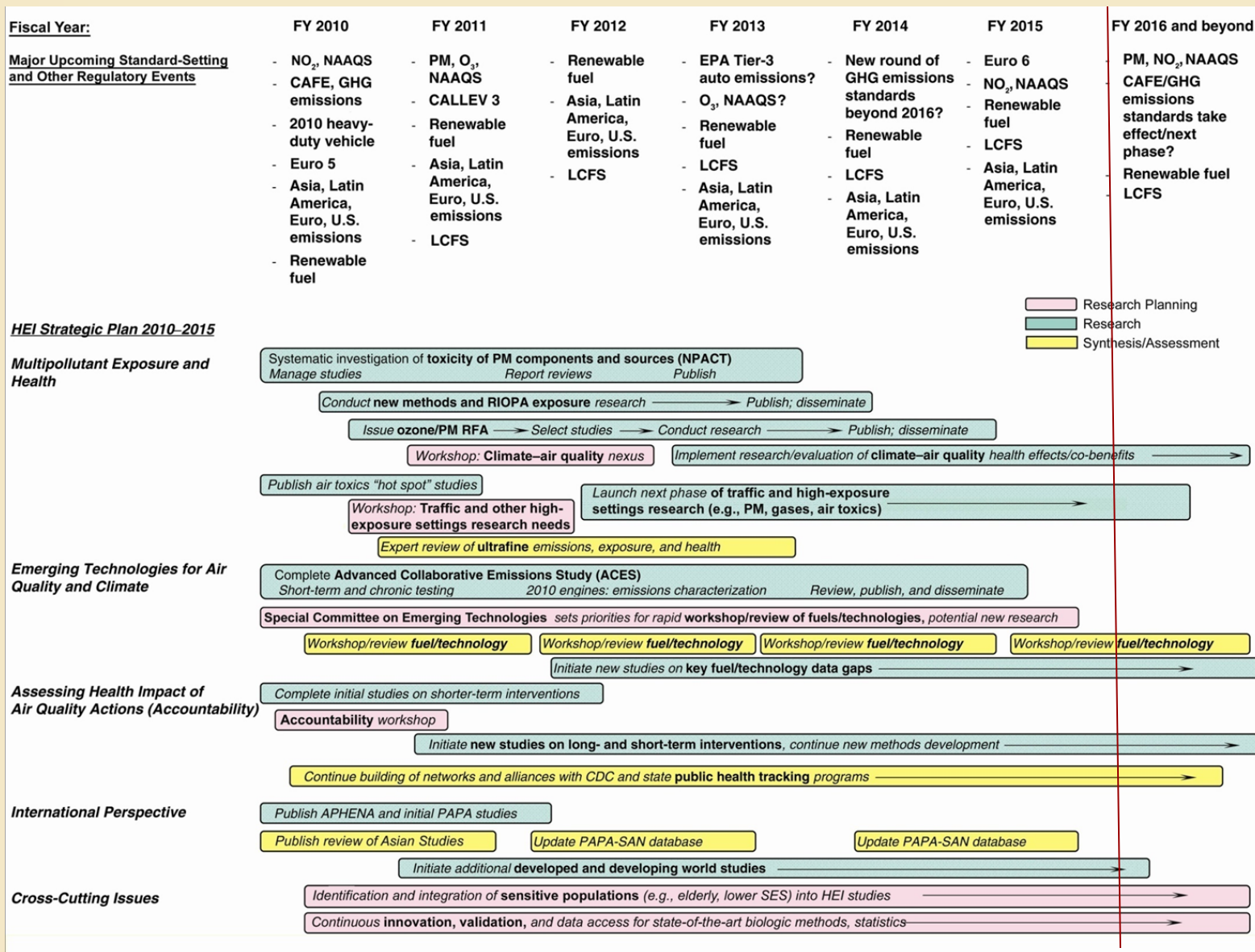


# Building for the Future: HEI's Strategic Plan

- Guides HEI's research and review activities;
- Responds to the needs of HEI industry & government sponsors, and other interested parties;
- Anticipates future policy and technology events; and,
- Evolves over time to adapt to changing knowledge and events



# Status of the Last Plan



# Major Accomplishments

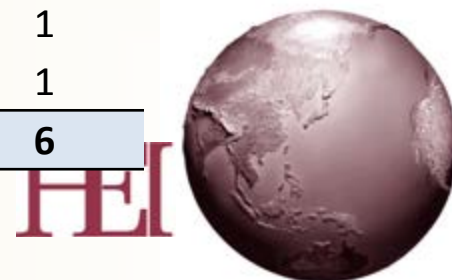
## Number of HEI Studies and Publications

April 2010 - March 2015

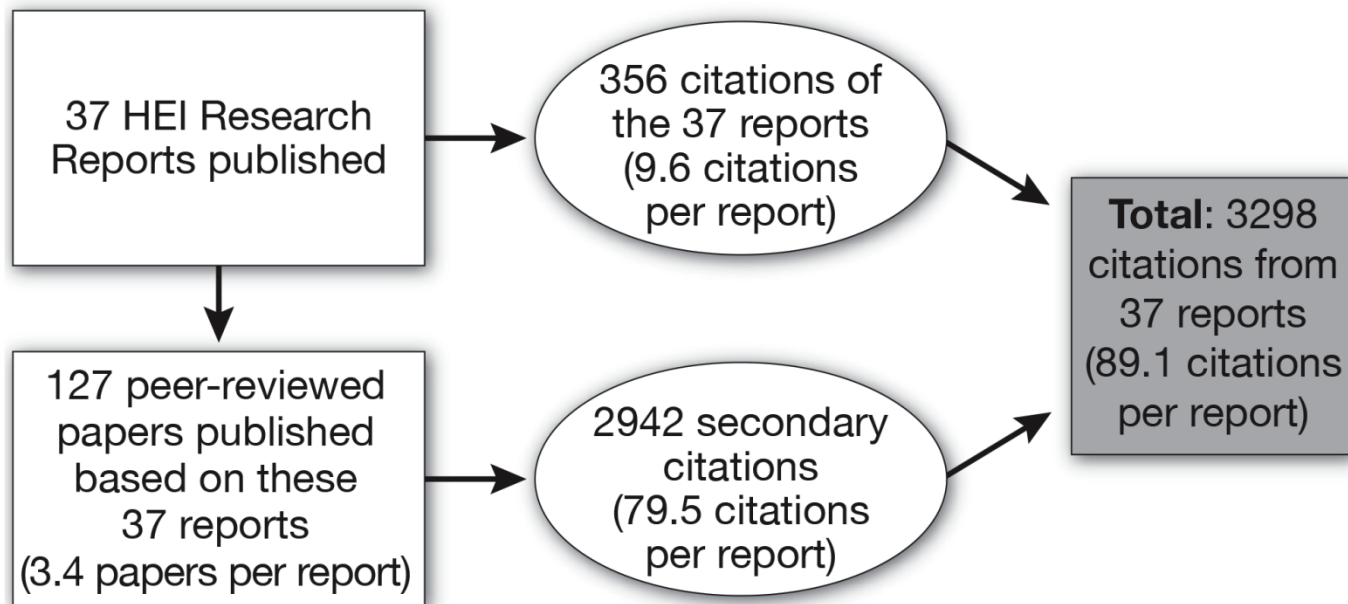
	Studies Initiated	Reports in Review	Published <sup>a</sup>	Other <sup>b</sup>
Air Pollution Mixture				
PM, Ozone, and Other				
Gases	16	4	12	1
Traffic and Diesel		0	3	0
Air Toxics	3	1	7	0
Innovative Statistics	2	3	1	0
Emerging Technologies and				
Fuels				1
ACES	0	0	2	2
Accountability	4	1	8	1
International	2	1	4	1
<b>TOTAL</b>	<b>33</b>	<b>10</b>	<b>37</b>	<b>6</b>

<sup>a</sup> Excluding 3 pilot reports and 3 unpublished reports

<sup>b</sup> Special Reports, Perspectives and Communications



# Impact of HEI's Research



# Major Accomplishments -- cont

- Most recent publications:
  - Health effects testing of new technology diesel engines (ACES Phase 3)
  - National Particle Component Toxicity (NPACT)
  - Global Burden of Disease (GBD) – from outdoor air pollution<sup>a</sup>
  - Reports on accountability, traffic related pollutants, statistical methods, and others
- Forthcoming:
  - Report from the HEI Diesel Epidemiology Panel
  - Executive Summary of the HEI ACES Program
  - Multicenter Ozone Study in Elderly Subjects (MOSES)
  - Reports from second wave accountability studies, traffic studies, methods and many others
  - GBD: Source specific contributions to air pollution in select countries<sup>a</sup>
  - Report from the HEI Panel on Unconventional Oil and Gas<sup>a</sup>

<sup>a</sup> Supported from separate sources





# Choosing the Future: the HEI Planning Process

## POTENTIAL TOPICS

### Major Opportunities

- **Informing Tough Upcoming NAAQS/Limit-Values Decisions**
  - Effects of long-term exposure to low levels of air pollution
  - Further analyses in the NPACT and ESCAPE studies
  - Cardiovascular effects of ozone
- **Examining Exposure and Health Related to Traffic and Ports**
  - Enhanced and innovative exposure assessment
  - New health studies of road and port exposures
  - Evaluation of sensitive populations
  - Exposure components of special interest
  - A possible updated HEI Traffic Special Review
- **Improving Science for Decisions: Accountability and Transparency**
  - New methods
  - At-risk communities
  - Improving transparency and data access
- **Climate, Air Quality, and Health**
  - Evaluation of fuel-efficient vehicles
  - Global decisions on air quality and climate

## STRATEGIC PLANNING PROCESS

### Input from

- **Sponsors**
  - U.S. EPA
  - Motor vehicle industry
  - Oil and other industries
- **HEI scientific committees and board**
- **The scientific community**
- **The environmental community**
- **International agencies**
- **Others**

### Selection criteria:

- **Importance to**
  - Public health
  - Regulation and technology (short- and long-term)
  - Science
- **Research activities by others**

## THE HEI STRATEGIC PLAN 2015–2020

... and beyond

### Informing Decisions on Air Quality and on Climate-Driven Technology

- **Multipollutant Science**  
(low dose, statistics, traffic)
- **Accountability and Transparency**
- **Emerging Fuels and Technologies**
- **Global Health Science**
- **Cross-Cutting Issues**
  - Statistical models
  - At-risk populations
  - Enhanced exposure
  - Climate change
  - New biologic techniques
  - New health outcomes

### Lower-Priority Items (which will **not** be a focus)

- Single-pollutant research programs
- Life-cycle analysis
- Broader climate change issues and effects

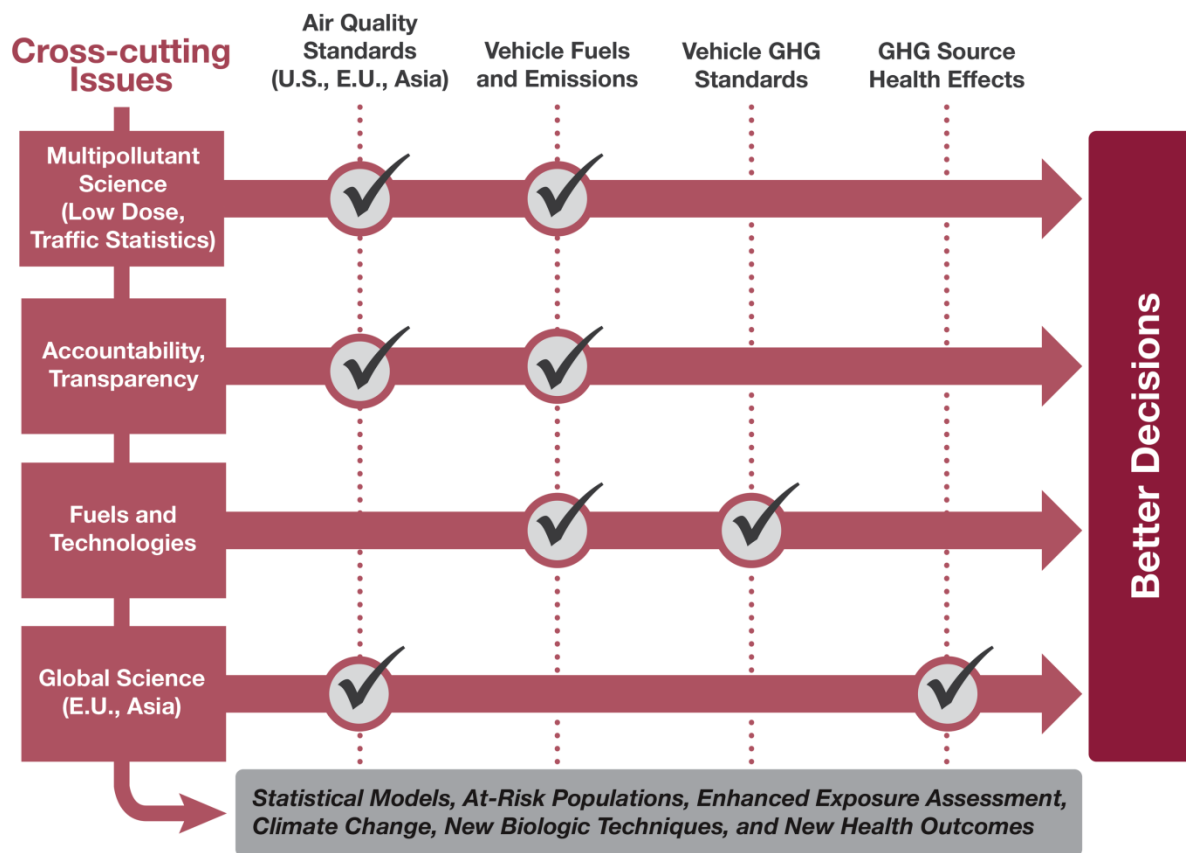




# The Four Core Program Areas

## The HEI Strategic Plan 2015–2020... and beyond

### Informing Decisions on Air Quality and on Climate-Driven Technology



# Multipollutant Science

- Estimating the effects of low exposure levels
  - RFA on this topic – already published
  - MOSES (nearing completion)
- Emissions, exposures and health effects of the air pollution mix
  - Exposures and health effects from traffic and port sources
    - Complete current traffic and tunnel studies
    - Major update of the HEI Special Report on traffic
    - New research on traffic health studies, near traffic and port facilities – especially potential effects in susceptible communities
  - The changing nature of diesel sources and emissions
    - The Diesel Epidemiology project
    - Non-tail pipe emissions
    - Also, to be included as important issues in traffic and other studies



# Accountability and Transparency

- Accountability (Health Outcomes)
  - Completion and publication of four studies
  - Planning for the next phase of accountability program
  - Implementation of the new studies
- Transparency
  - Enhancing HEI's ability to build data access from inception into all our work



# Emerging Fuels and Technologies

- Executive Summary of the ACES Program
- Toxicity testing for emissions from emerging technologies and fuels
  - A suite of in vitro and short term assays, with particular focus on airborne pollutants
- Workshops and other activities on:
  - Aromatics in gasoline and PM formation
  - Gasoline direct injection and UFP emissions
- Continue to work with the HEI Special Committee on Emerging Technologies (SCET)

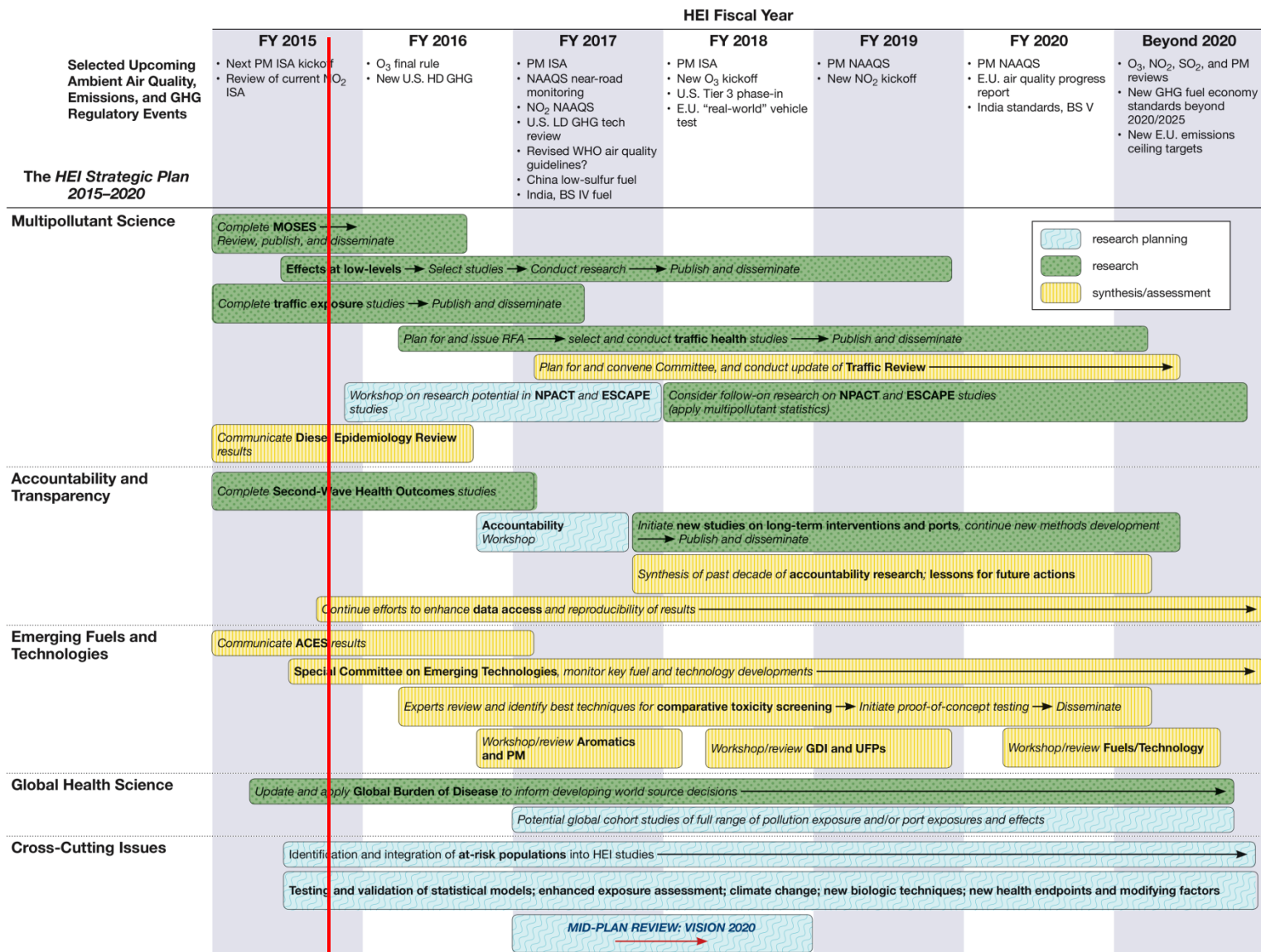


# Cross-Cutting Issues

- Multipollutant Statistical Models – development, application and testing
- At-risk populations
- Enhanced exposure assessment
- Climate change and health
- Capacity building: Support of early-career investigators
- Others

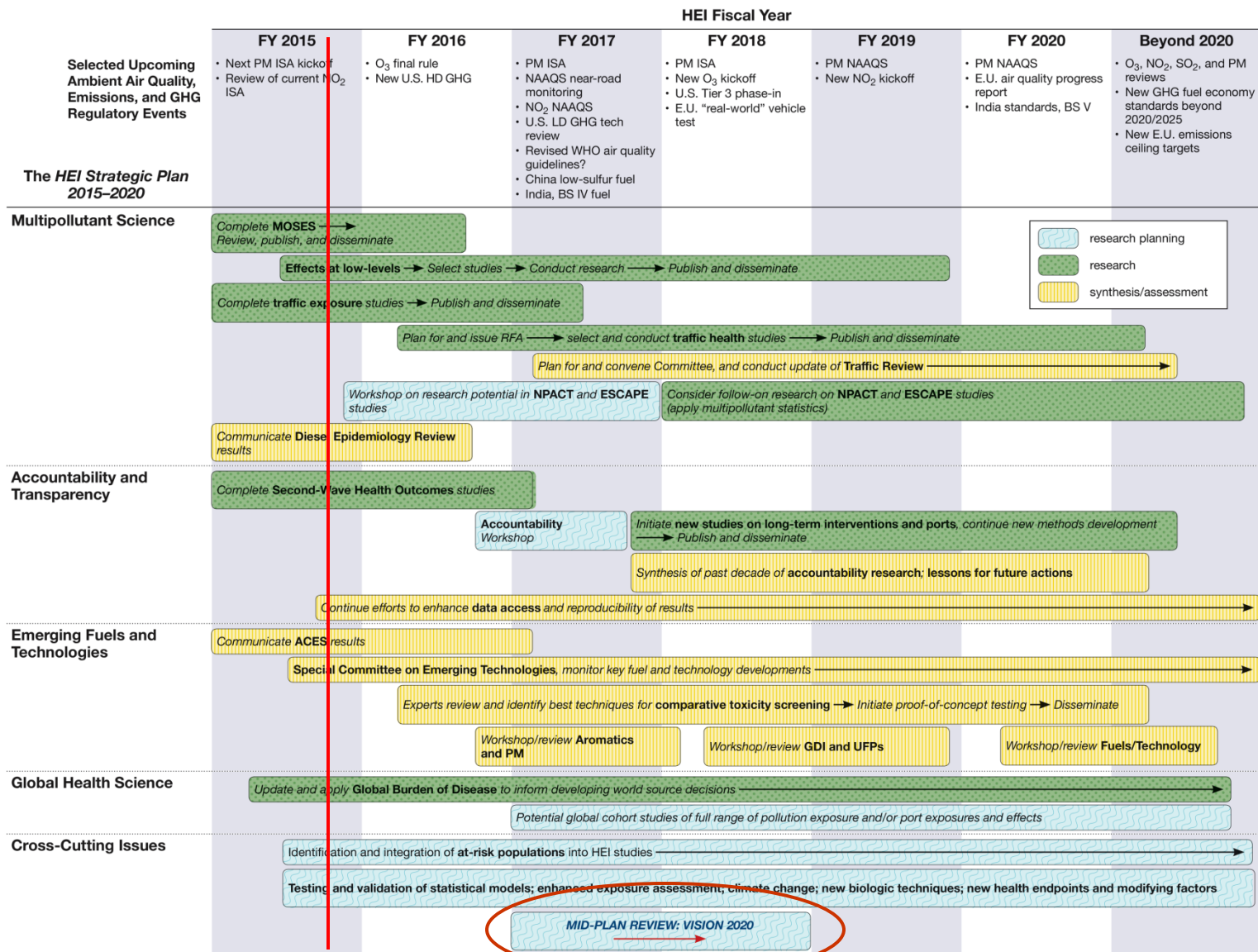


# Implementation of Strategic Planning 2015 – 2020





# Implementation of Strategic Planning 2015 – 2020





**Change:**

- The only constant in life!



# Thank you!!

Copies of Strategic Plan 2015-2020  
available at the main desk

