



Statens vegvesen

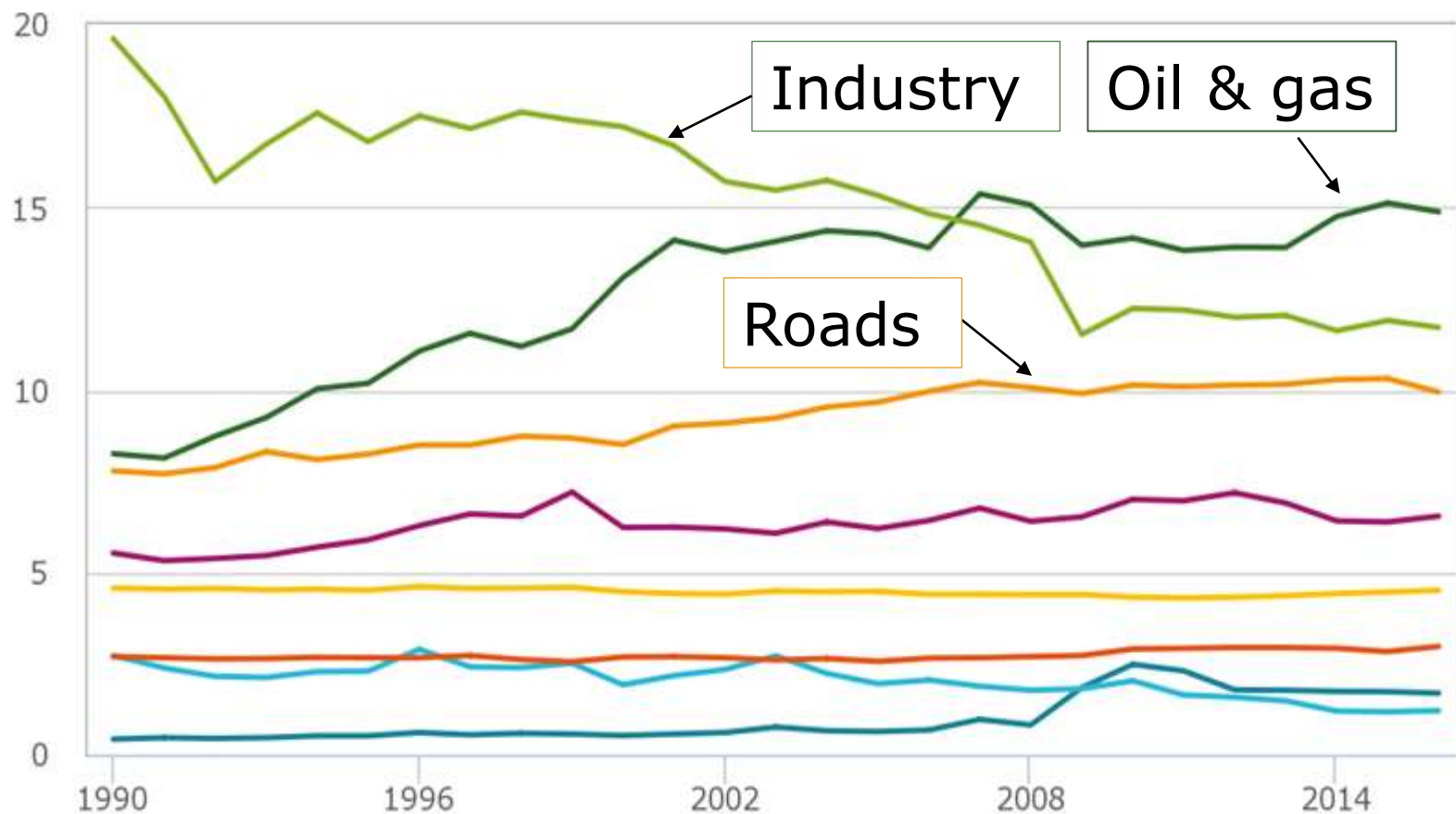


Climate Mitigation in Public roads procurement (The KraKK-project, so far)

Karl Sigurd Fredriksen

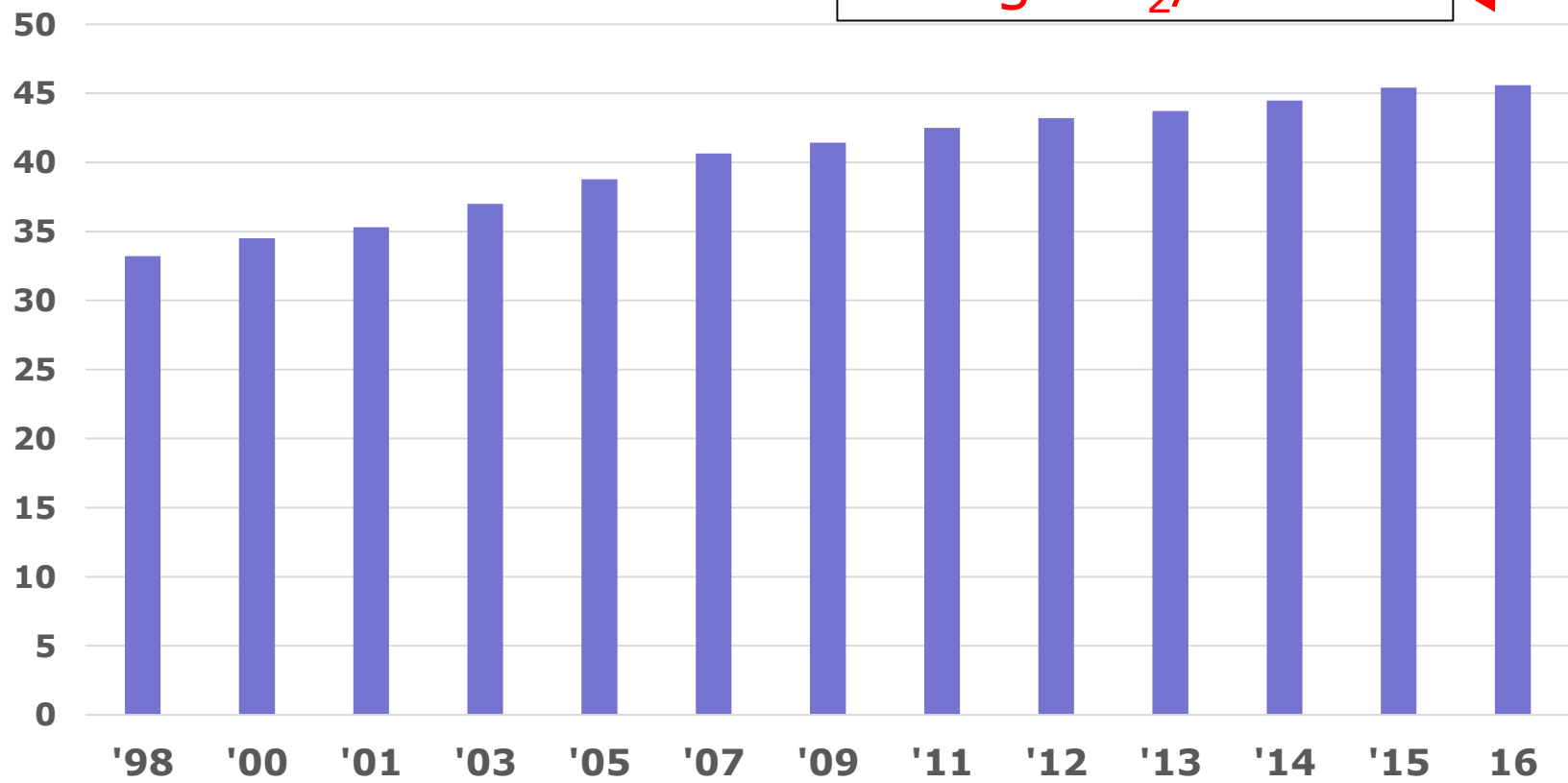
Norwegian Public Roads Administration and
University of Agder, Norway

Sources of CO_{2eq} in Norway, mill tons



Traffic work Norway (billion vkm, public roads)

10 mill. ton →
220 g CO₂/vkm



Engineering is important!



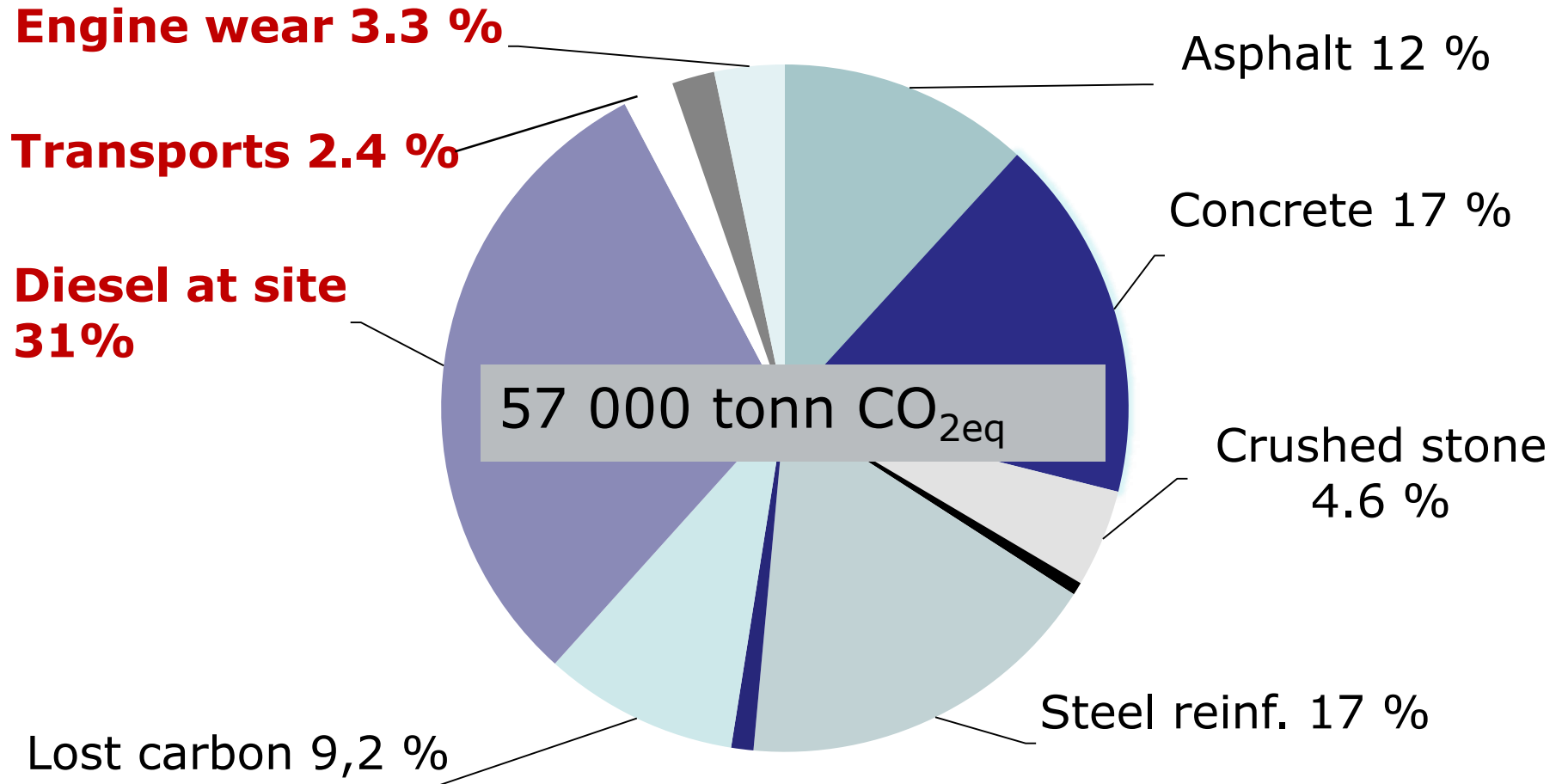
E18 Sky-Langangen, finished 2012

- ✓ **11 km**
- ✓ **w = 23m**
- ✓ **200 mill €**
- ✓ **Tunnels**
- ✓ **Bridges**

- ✓ **6500 m³ diesel**
- ✓ **57000 ton CO₂**



CO_{2eq}-account E18 Sky-Langangen



Source: UiA

Annual CO_{2eq} from public roads

(Rough estimate 350 t CO_{2eq} /million €)

Source	Billion €/year	Mill. tonn CO ₂
National road inv.	3.3	1,2
Nat. roads oper./maint.	1.1	0,4
Other publ.road inv.	1.3	0,4
Other publ.r. op./maint	0.9	0,3

CO_{2eq} from total public roads: ~ 2,3 mill tons/year
→ 20-25 % in addition to direct traffic emissions

The NPRA «KraKK» project (2016-2018)

Climate specifications for tenders

Aimed CO2 reduction 1990 –2030:

- Operation and maintenance: 50%
- Investments: 40%

Specifications and improvements by:

- General tender norm (award criteria included)
- Handbooks, guidelines
- Education (internal)

RoadLCA: Emission budget / accounting tests running (see poster)

Status

One operation contract - for 8 years:

- Trucks: Euro 6
- Machines/tractors: Stage IV
- HVO/advanced bio: bonus 0,25 €/liter
- Snowplowing by tractor limited

One construction contract ~ 100 mill €

- **CO₂ award criteria** *and* other criteria

May 2017 - New public procurement regulation

In (public) procurement environmental issues shall be focused and climate friendly solutions preferred when relevant
(Short version)

Next NPRA specifications

- ✦ EPD's demanded when available (2017)
(Covering concrete, asphalts, some steel)
- ✦ Steel: Recycled only?
- ✦ Max CO₂ for important EPD's (2018)
- ✦ Bonus when better (end of 2018?)
- ✦ Motors: Stage IV and Euro 6? *Health mainly!*

Funding for new methods

- ✦ Norway has been a global lab for battery cars!
- ✦ For heavy, mobile construction equipment also?
- ✦ Hydrogen, fuel cells and batteries
- ✦ Biodiesel? New industry needed (big political issue)
- ✦ CCS from cement production needed

Thank you!