E e g U e A g c e

Potential for Solar Irrigation Reduction of Agricultural Emissions in India

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I d c

- A c a a a a c a d c
  - Direct use of energ farm machiner irrigation cultivation and other crop operations
  - Indirect or embedded energ consumption in the form of fertili ers and chemical pesticides land transport trade financial services etc

- I c a c a a a c a d c

Energy Use in Agriculture – Key Indicators

Research Objective & Methodology

Research Objectives:

Research Objective Methodolog

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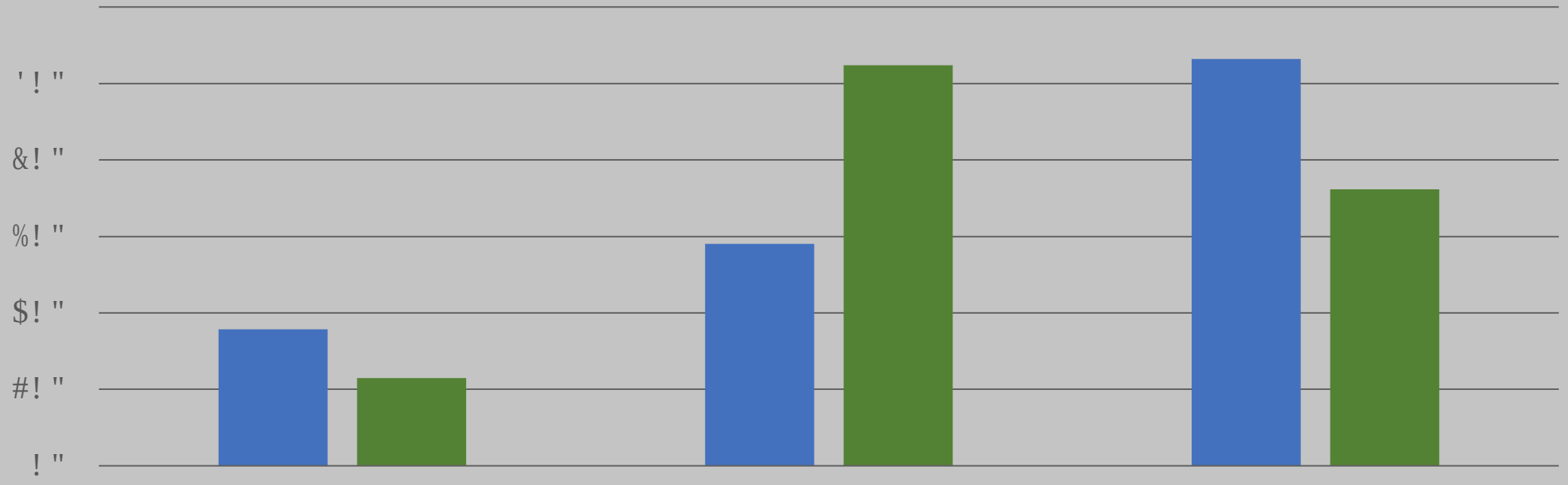
Using the Input Output table to assess changes in the relationship bet een crops their inputs and direct and indirect energ in each input

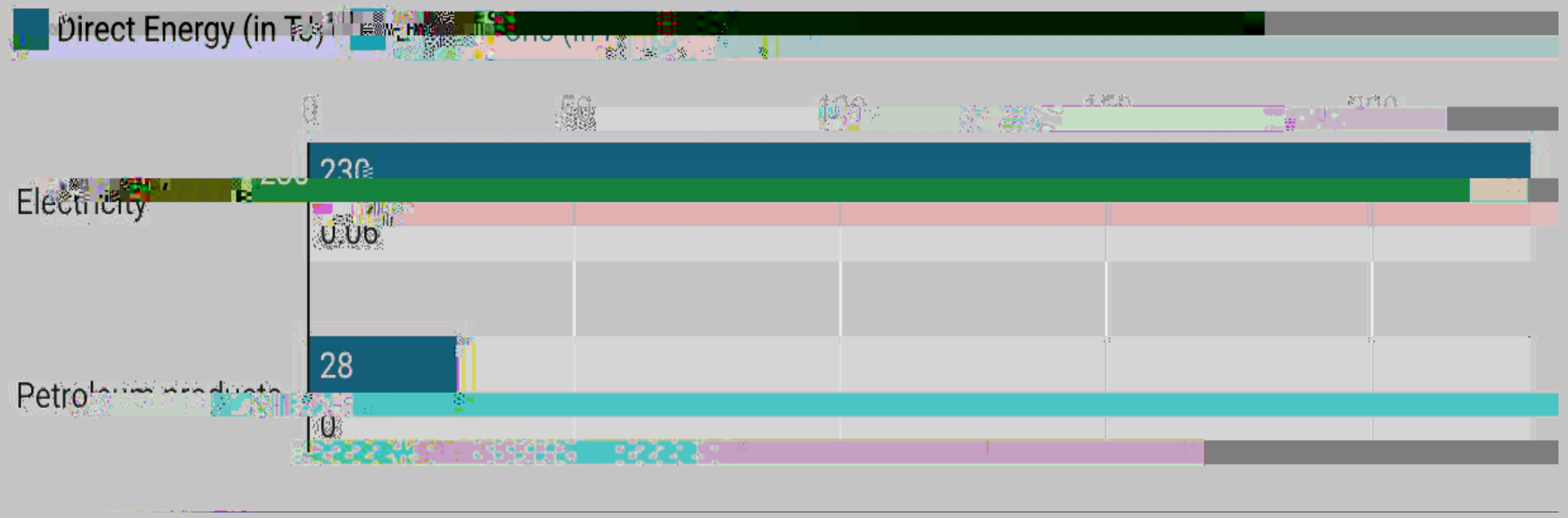
- From the total value of inputs to agriculture percentage contribution of each input as calculated
- Direct energ use as assessed b estimating primar and secondar energ sources going into agriculture directl as inputs Conversion factors ere used to convert value of input in Rs to energ terms
- Indirect Energ Use Coefficients ere calculated for share of energ used b indirect inputs into agriculture e g Share of fertili er used per unit of agricultural output as multiplied ith the energ used per unit of fertili er output produced to estimate indirect energ

Energy Use & Emissions in Indian Agriculture

1. Estimation of Direct & indirect energy use and resulting emissions
2. Comparison of energy use and emissions for different crops

Gross Value Added by Agriculture





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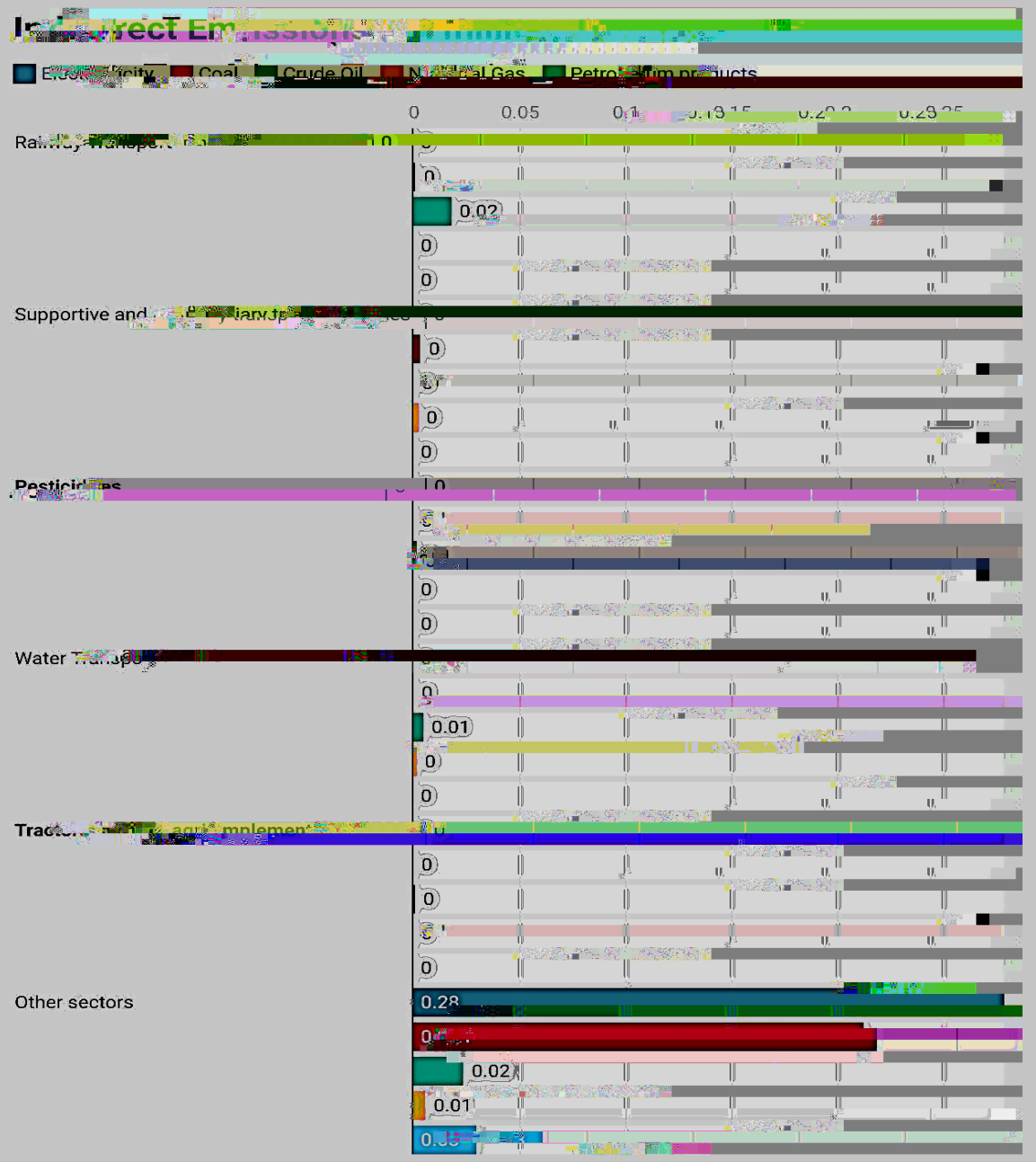
- Direct energy utilization in agriculture (2015) was 258 TJ which formed only 3% of the total energy (direct and indirect energy) used in the agricultural sector.

I E

E I


Coal
Crude Oil
Petroleum products
0
0.01
0.03
0.02
0.03
0.07
Financial services
0.01
0.02


Coal
Crude Oil
Petroleum products
0
0.05
0.02
0.01
Other sectors
0.28
0.02
0.01

Possible Reduction in Emissions

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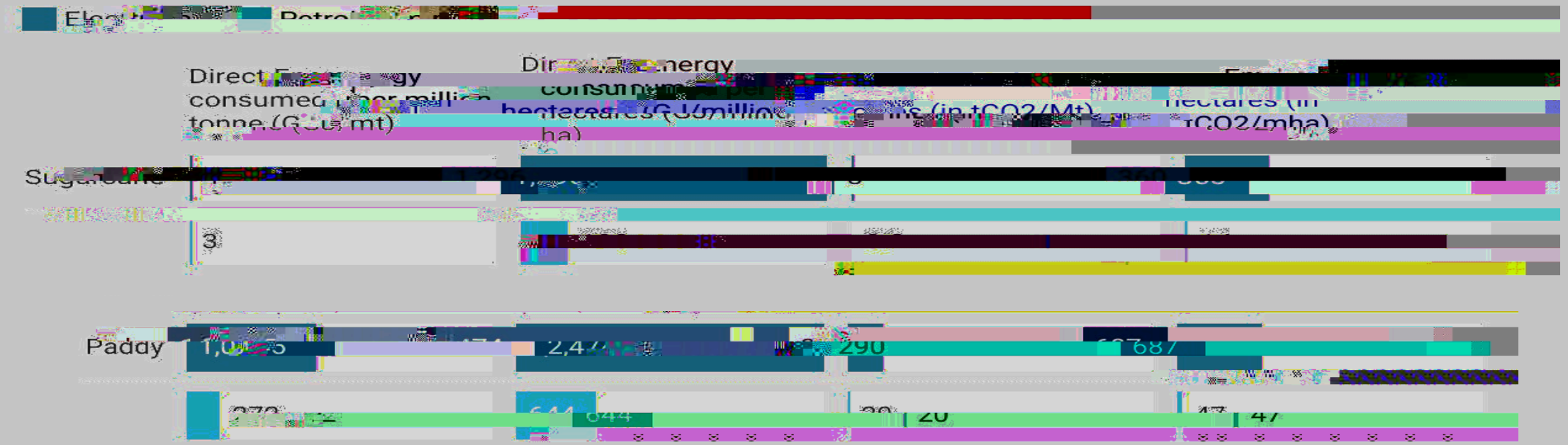
- Wide variation in direct energy use for paddy and sugarcane
- Sugarcane requires lesser energy input and is more energy efficient than paddy



I E P S

T E E P S

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Conclusions

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- Energ suppl and consumption in agriculture is lov and needs to be increased
- Need for enhanced agricultural productivit through increased mechani ation of irrigation and other crop operations
- Adherence to SDG Double agricultural productivit and incomes v hich necessitates need for enhanced utili ation of inputs and investments

Conclusions

3.

- With changes in cropping patterns increase in economic activit energ use in agricultural sector v ill change
- Need for estimation of energ use for individual crops and use the inter linkages v ith agricultural inputs to inform polic making

- Emissions from direct consumption of energ in agriculture are lo
- Shifts emphasis of energ transitions and climate mitigation on agricultural sector
- Disregards emissions in energ and industr from the developed v orld and shifts mitigation burden onto developing nations