EUROPEAN GREEN DIGITAL COALITION

Supported by the European Commission and Parliament at the EU Council's request, the EGDC unites companies to use digital solutions for reducing emissions across key sectors.

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NEC

NEC's CropScope precision agriculture platform allows for data driven application of fertilisers. CropScope's Variable Rate Fertilisation (VRF) Maps enable fertiliser reduction while maintaining yields. Without this solution, farmers utilise excessive fertilisers which results in leaching and volatilisation of nitrous oxides due overapplication of fertilisers. This leads to higher spend in fertilisers, and numerous environmental consequences to the surrounding area.

This assessment is an ex-post case study carried out by NEC in Japan, collecting data for corn across its harvesting season.

Organisational contribution: NEC worked to innovate, develop, and deploy the solution. This aligns with A-level classification as defined by ITU-T L.1480 (contribution of the integrated solution or the innovation of the solution).

Quantified impacts:

1 crop cycle	-653 to -987 $kgCO_2e$/crop cycle	-0.09 $kgCO_2e$/crop cycle
Assessment period	*Net carbon impact range accounting for uncertainty*	**Net carbon impact per kg of product**

Other identified impacts:

Economic: Cost savings - The solution provides cost savings for the farmer which when invested into typical business carbon intensive activities, this could result in ~2% reduction of the total net carbon impact. This is considered as low risk and NEC are actively exploring measures to ensure that cost savings are re invested in ways that further reduce emissions rather than increase them.

Further environmental impact: Improved water quality, biodiversity and soil health - Reduced fertiliser use can also deliver benefits: Reduced run-off improves local water quality and reduces eutrophication that cause algal blooms and kills aquatic life. Nutrient pollution can disrupt the natural flora communities favouring the fast-growing species, creating consequences for both flora and fauna. Improved soil health, decreased acidification and salinisation as well as increase organic matter retention. Which relates to healthier ecosystems.

Relevant links: Contact us | Methodology | Calculator

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This assessment is an ex-post case study carried out by NEC in Japan, collecting data for winter wheat across its harvesting season.

Organisational contribution: NEC worked to innovate, develop, and deploy the solution. This aligns with A-level classification as defined by ITU-T L.1480 (contribution of the integrated solution or the innovation of the solution).

Quantified impacts:

1 crop cycle	-2,953 to -4,613 $kgCO_2e$/crop cycle	-0.12 $kgCO_2e$/crop cycle
Assessment period	*Net carbon impact range accounting for uncertainty*	**Net carbon impact per kg of product**

Other identified impacts:

Economic: **Cost savings -** The solution provides cost savings for the farmer which when invested into typical business carbon intensive activities, this could result in ~2% reduction of the total net carbon impact. This is considered as low risk and NEC are actively exploring measures to ensure that cost savings are re invested in ways that further reduce emissions rather than increase them.

Further environmental impact: **Improved water quality, biodiversity and soil health -** Reduced fertiliser use can also deliver benefits: Reduced run-off improves local water quality and reduces eutrophication that cause algal blooms and kills aquatic life. Nutrient pollution can disrupt the natural flora communities favouring the fast-growing species, creating consequences for both flora and fauna. Improved soil health, decreased acidification and salinisation as well as increase organic matter retention. Which relates to healthier ecosystems.

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This assessment is an ex-post case study carried out by NEC in Japan, collecting data for spring wheat across its harvesting season.

Organisational contribution: NEC worked to innovate, develop, and deploy the solution. This aligns with A-level classification as defined by ITU-T L.1480 (contribution of the integrated solution or the innovation of the solution).

Quantified impacts:

1 crop cycle	-592 to -891 $kgCO_2e$/crop cycle	-0.07 $kgCO_2e$/crop cycle
Assessment period	*Net carbon impact range accounting for uncertainty*	**Net carbon impact per kg of product**

Other identified impacts:

Economic: Cost savings - The solution provides cost savings for the farmer which when invested into typical business carbon intensive activities, this could result in ~2% reduction of the total net carbon impact. This is considered as low risk and NEC are actively exploring measures to ensure that cost savings are re invested in ways that further reduce emissions rather than increase them.

Further environmental impact: Improved water quality, biodiversity and soil health - Reduced fertiliser use can also deliver benefits: Reduced run-off improves local water quality and reduces eutrophication that cause algal blooms and kills aquatic life. Nutrient pollution can disrupt the natural flora communities favouring the fast-growing species, creating consequences for both flora and fauna. Improved soil health, decreased acidification and salinisation as well as increase organic matter retention. Which relates to healthier ecosystems.

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