

Request for Proposal RFP_2019_0102: Water Recovery Systems for Flue Cured Tobacco Barns

RFP Title	Water Recovery Systems for Flue Cured Tobacco Barns
Due Date	Jul 10
Opportunity	Licensing, product acquisition, proof of concept leading to scale-up to manufacturing, joint development, supplier agreement
Timeline	Phase 1 – Technology Assessment – 1-3 months Phase 2 – Development plan / Scale up – 6-12 months
Financials	All terms to be negotiated depending on technology status
RFP Description	NineSigma, representing a global tobacco company invites proposals from organizations and researchers for technologies which target water recovery from the exhaust airstream of flue cured tobacco curing (drying) barns.
Background	<p>NineSigma's client is a global tobacco company who are leading the sector in terms of sustainability and, in particular, water stewardship.</p> <p>Currently, tobacco leaves are cured in large barns close to the fields over a period of up to 7 days. During this time, temperature is gradually increased from around 35 to 70°C and consequently the moisture of the leaves is reduced from 85% down to 15% ca. Water is evaporated from tobacco during the curing and it is discharged as vapour in the exhaust air stream.</p> <p>NineSigma's client would like to improve their water sustainability profile and are seeking water condensing / reclamation technologies which can collect the vapour and enable the water to be utilized for other farming purposes.</p> <p>The proposed technologies must be able to work in the stipulated temperature ranges and also be compatible with current power sources and NOT require major design reconstruction of the drying barns.</p> <p>The ideal solution would require minimal development and be available commercially within 3 months, with the understanding that the proposed technology may require a short development cycle.</p>
Key Success Criteria	<ul style="list-style-type: none">• Temperature of the exhaust airstream range: 35 - 70°C• Temperature is ramped up over 7 days• Highest water recovery rates between 3 - 5 days• Power source compatible (i.e. modular) with onsite power sources• LPG, biomass, natural gas, diesel• Theoretical water recovery of ca 7m3 per barn per drying cycle• Technology must be at POC or prototyping stage
Area of Interest	Materials Science Engineering-Industrial Engineering-Aerospace Energy and Power Science Engineering Science and Materials Engineering-Automotive Engineering-Electrical Engineering-Environmental Engineering-Mechanical

Possible Approaches

- Water reclamation technologies
- Heat pumps

- Compact
- High capacity systems

- Water extraction based on adsorption / desorption
- Water extraction using biomimetics
- Condensation phenomenon (cooling of air)
- Heat exchangers, evaporators, condensers

Approaches not of Interest**Preferred Collaboration Types**

Joint Development
Technology Licensing
Supply Agreement
Technology Acquisition
To Be Negotiated

Items to be Submitted

Your response should contain only **non-confidential information** and address the following:

- Overview of the proposed technology (principle, characteristics and intended use)
- Uniqueness of the proposed technology
- Development stage (concept level / performance verified on laboratory level / already implemented for practical use)
- Current performance
- Applicable temperature and humidity conditions
- Amount of water to be extracted
- System size
- Power consumption
- Application result to a water extraction system
- Development plans and estimated costs to meet the ultimate requirements

Award Amount**Attachments**

No Files Selected

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Picture

Temperature and tobacco moisture profile

