

**sdmay18-41: Energy blockchain implementation for free market P2P energy trading**

Week 7 Report

November 9 - November 30

**Team Members**Joseph Staudacher — *Hardware design*Alec Dorenkamp — *Blockchain developer*Noah Eigenfeld — *Blockchain/web app developer*Brendon Geils — *Blockchain/smart contract lead developer*Jackson Myers — *Hardware/embedded programming*Arun Sondhi — *Hardware/software interface***Summary of Progress this Report**

- Decided on Node/React for prototyping
- Further explored economic and legal issues surrounding our project
- Revised project plan to reflect our current progress
- Refined our testing plan and determined what components we want to be ready for testing by the end of the semester
- Decided on an e-paper display for the meter user interface

**Pending Issues**

- Begin programming hardware demo once current sensor/display arrive
- Continue testing with coins and smart contracts
- Adjusting scope of our project regarding energy management?

**Plans for Upcoming Reporting Period**

- Finalize a concrete testing plan with deadlines and milestones
- Obtain all necessary hardware components and begin programming
- Begin preparing for final panel review

**Individual Contributions**

Team Member	Contribution	Weekly Hours	Total Hours
Joseph Staudacher	Researched e-paper display options, worked to further define desired capabilities for smart meter	8	34
Alec Dorenkamp	Began planning demo for final presentation, further considered and fleshed out justifications for using a blockchain implementation rather than a simple marketplace, and researched software dev	8	35

	approaches for web application		
Noah Eigenfeld	Developed more detailed system diagrams, Game Theory as it relates to Ethereum DApps and experimented with DApp development	9	36
Brendon Geils	Worked to adjust scope of project to meet market demands, explored economic background of problem and possible modifications, You can put down: research blockchain alternatives and figure the technical resources for the alternatives, MERN stack	12	54
Jackson Myers	-researched software libraries available for connecting raspberry pi to blockchain - explored documentation of implementations of similar and related concepts (Grid+, Amper) -planned overall desired specifications of smart meter with Arun and Joe (what data will be retrieved, what data will be stored, what will be sent to blockchain and when, how will user interface with meter) -researched Raspberry Pi I/O for our modules to see how we will obtain data from current sensor	12	43
Arun Sondhi	Read and researched e-paper solutions for Raspberry Pi. Developed understanding of similar embedded solutions with API usage. Began MERN tutorial.	8	35