Impacts of Demand Side Management on Electricity System Planning.
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Abstract
This research focus on the impacts of demand side management on electricity in residential of Ireland using demand side applications and power world software to manage the load handling rather to build new networks line. The model is based on an IEEE bus 14 example currently to get awareness of Power world system assuming a residential area for a more realistic simulation and solutions in future.

1. Introduction
In the first chapter I discuss the introduction of Demand Side Management (DSM) to familiar with the concept behind it so that I can build the research motivation for the DSM and its impacts in Ireland. Demand side Management is a technique which involves electricity users having capability to change their behavior of use of electricity from their normal or current consumption patterns. It can provide benefits to consumer end in term of fewer bills and gives them big control over the energy crisis[1].

Traditional user’s supplier report in the electrical market has evolved following a strategy imply whenever a load switched on, expectation is fulfilled by the supplier on expected time and quality. Growing demand of electricity led to troubled electrical services manifested mainly by daily and seasonal peaks and low demand[2]. Those high peaks on electrical networks are associated with comprised quality, risk of forced outages and high-priced energy supply while low demand may be driving power plants to be operating at critical economic viability. Demand Side Response Techniques are helping electricity users to become participant in averting detrimental conditions presently prevailing on the electricity network[2].

Main objective is of Ireland energy sector is to reduce costs and increase the chance of affordability of energy in terms of demand and supply, economic competitiveness and environmental sustainability[3]. Energy policy objective for that, Government is considering on statement “Delivering a sustainable Energy Future for Ireland”. To Establish Demand Side Management (DSM) plan in Ireland Research and case studies are under process which is also my first step till now doing literature review. In literature, I am focusing on different Demand Side Management Applications that are already been checked in some part of world. I reviewed these and took all that in Ireland Energy and environment scenario which would be most suitable application. DSM start in Ireland was an Energy Efficiency Plan; it was released for public consultation in September 2007. Plan proposes wide options of actions and measures that will give Ireland’s Energy Efficiency targets. It checks the capability in these sectors for the peak electricity demand reduction to underpin efficiency, Security and carbon Reduction Objectives. Current and future work under the consideration of improving policies about DSM and better impacts, Government is establishing ambitious targets. The central commitment is to a national energy saving Targets of 20 per cent across the whole economy by 2020[4]. Eir-Grid highlights the importance of addressing peak electricity demand through demand side management initiatives and sets out government’s commitment to developing enhanced, cost-effective demand side management programmed to deliver both energy efficiency gains and peaks demand reduction.

2. Methodology
To Develop a working simulation of Demand side management, it is necessary to understand demand side applications workable in Irish condition, which reviewed in literature portion. After that next phase is case study in which power world software was used. I select a system test case of IEEE to understand attributes and bars of software and then took a one day MW data from eirgrid website.

To understand DSM in case study part in power world following circuit is under examine (Figure 1). The basic results are:

![Fig 1: IEEE 14 Bus Test Case][5]

In the run mode result from Model Explorer results are

![Figure2: Load Explorer](image)

Third phase was to check time step simulation for that in initial phase two load busses data was inserted to get a exemplary graph. Which is in (Figure 3)
Helpful to make an economic feasibility assessment for the system in the end.

5. References


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