Approach								Standard		Criteria																								
										Value Chain								TC 57 Reference Architecture					Recommendations											
DKE Normungs-roadmap Smart Grid 1.0	NIST IOP Framework Roadmap 1.0	SMB SG 3 IEC	BMWi E-Energy Program Recommendations OFFIS	BDI - Internet der Energie	Microsoft SERA	CIGRE D2.24	CEN/CENELEC M/441	Standard	Description	Generation	Energy Trading	Supply	Transmission	Storage	Distribution	Metering	Usage	integration of business partners	integration of applications	integration of devices and plants	security	data management	General Recommendation	Regulatory Recommendation	Recommendation for Security, Safety or Privacy	Recommendation for Communication	Recommendation Active Distribution grid	Recommendation Smart Meter	Recommendation Electric Vehicles	Recoemmndation Storage	Recommendation Load management and Demand Response	Recommendation Building and Home Automation	Recommendation Distributed generation	Recommendation Architectures and SCADA
								AMI-SEC System Security Requirements	Advanced metering infrastructure (AMI) and SG end-to-end security																									
								ANSI C12.19/MC1219	Revenue metering information model																									
								BACnet ANSI ASH-RAE 135-2008/ISO 16484-5	Building automation																									
								Digital meter / Homegateway	Mandate M/441 of CEN/CENELEC																									
								DNP3	Substation and feeder device automation																									
								EDIXML	Market communication for Germany																									
								IEC 60870	Communications protocol																									
		High						IEC 60870-5	Telecontrol, EMS, DMS, DA, SA																									
		High						IEC 60870-6 / TASE.2	Inter-control center communications TASE.2 Inter Control Center Communication EMS, DMS																									
								IEC 61334	DLMS																									
		High						IEC 61400-25	Wind Power Communication EMS, DMS, DER																									
								IEC 61499	SPS and Automation, Profile for IEC 61850																									
								IEC 61850	Substation automation and protection,Distributed generation, Wind parks, Hydro, E-Mobility																									
		High						IEC 61850-7-410	Hydro Energy Communication EMS, DMS, DA, SA, DER																									
		High						IEC 61850-7-420	Distributed Energy Communication DMS, DA, SA, DER, EMS																									
		High						IEC 61851	EV-Communication Smart Home, e-Mobility																									
								IEC 61968	Distribution Management, System Interfaces for Distribution Management Systems, DCIM (CIM for Distribution)																									
								IEC 61968/61970	Application level energy management system interfaces, CIM (Common Information Model) , Domain Ontology, Interface, Exchange format, Profile, Process blueprints, CIM (Common Information Model) EMS, DMS, DA, SA, DER, AMI, DR, E-Storage																									
								IEC 61970	Energy Management, Application level energy management system interfaces, Core CIM																									
		High						IEC 62051-54/58-59	Metering Standards DMS, DER, AMI, DR, Smart Home, E-Storage, E-Mobility																									
		High						IEC 62056	COSEM DMS, DER, AMI, DR, Smart Home, E-Storage, E-Mobility																									
								IEC 62325	Market communications using CIM																									
								IEC 62351	SIA Security																									
								IEC 62351 Parts 1-8	Information security for power system control operations																									
								IEC 62357	IEC 62357 Reference Architecture – Service-oriented Architecture, EMS, DMS, Metering, Security, Energy Management Systems, Distribution management Systems																									
								IEC 62443	General Security																									
								IEC 62541	OPC UA (Automation))																									
		High						IEC TR 61334	DLMS, Distribution Line Message Service																									
								IEEE 1547	Physical and electrical inter-connections between utility and distributed generation (DG)																									
								IEEE 1686-2007	Security for intelligent electronic devices (IEDs)																									
								IEEE C37.118	Phasor measurement unit (PMU) communications																									
								ISO / IEC 14543	KNX, BUS																									
								NERC CIP 002-009	Cyber security standards for the bulk power system																									
								NIST Special Publication (SP) 800-53, NIST SP 800-82	Cyber security standards and guidelines for federal information systems, in-cluding those for the bulk power system																									
								Open Automated Demand Response (Open ADR)	Price responsive and direct load control																									
								OpenHAN	Home Area Network device communication, measurement, and control																									
								ZigBee/HomePlug Smart Energy Profile	Home Area Network (HAN) Device Communications and Information Model																									