Regional Workshop on Monitoring, Reporting and Verification of Greenhouse Gas Emissions

Practical Experiences From Establishing an Online Based Data Management System (DMS) For MRV In Turkey

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BRIEF HISTORY OF TURKISH MRV SYSTEM

2010   : Ministry began working on the MRV legislation

2010 – 2012   : Policy making and drafting process + informative meetings with sectoral unions

2012   : Framework legislation establishing the MRV rules published

2014   : Monitoring and Reporting By-Law Published

2014-2015   : Trainings for operators and Ministry personnel

2014   : Monitoring Plans submitted for the approval of the Ministry

2015   : Accreditation and Verification By-Law Published

2016   : Trainings and Examinations for the Verification Personnel

2016   : Verification Bodies licensed by the Ministry of Environment

2017   : Turkish Accreditation Institution (TURKAK) begins accepting accreditation applications

2017   : Verified emission reports for reporting years 2015 and 2016 are submitted to the Ministry

2018   : TURKAK issues accreditation certificates to VBs

2019   : TURKAK extends the scope of its MLA with EA to include VVBs (ISO 14065:2013 and EU-ETS)

CURRENT STATUS

▶ Verified Emission Data from 2015 (4 consecutive years)

▶ Reported Gases: CO_2, N_2O (From acid production), PFC (from primary aluminum production)

▶ Annually covers approx. 250 Million Tones CO_{2-eq} - 50% of national GHG emissions

▶ 750 Operators (biggest: 10 million tones /year – smallest: 100 tones/year)

▶ 9 Accredited Verification Bodies

WHAT IS DIFFERENT FROM THE EU?

▶ No Trading of Allowances: Turkish MRV system only sets the rule for the obligatory monitoring reporting and verification of GHG emissions

▶ No CCS, aviation and maritime transport: Turkish MRV system has the same coverage with the EU regarding the stationary installations but aviation, maritime transport and CCS activities are excluded – aviation will be included soon

▶ Verification activities are regulated: Minimum man-day requirements for installations, minimum man day fee, competency requirements for the Verification Personnel (minimum man-day experience, minimum years of experience, etc.), maximum yearly limit for team leaders (120 man-day work as a team leader)

▶ 3 year transition period for operators to apply required tiers (monitoring methodologies)

▶ Other other differences (use of laboratories, rules for verification contract, sanctions for operators and VBs, deadline for verification contracts, deadlines for submission of verified emission reports, etc.)
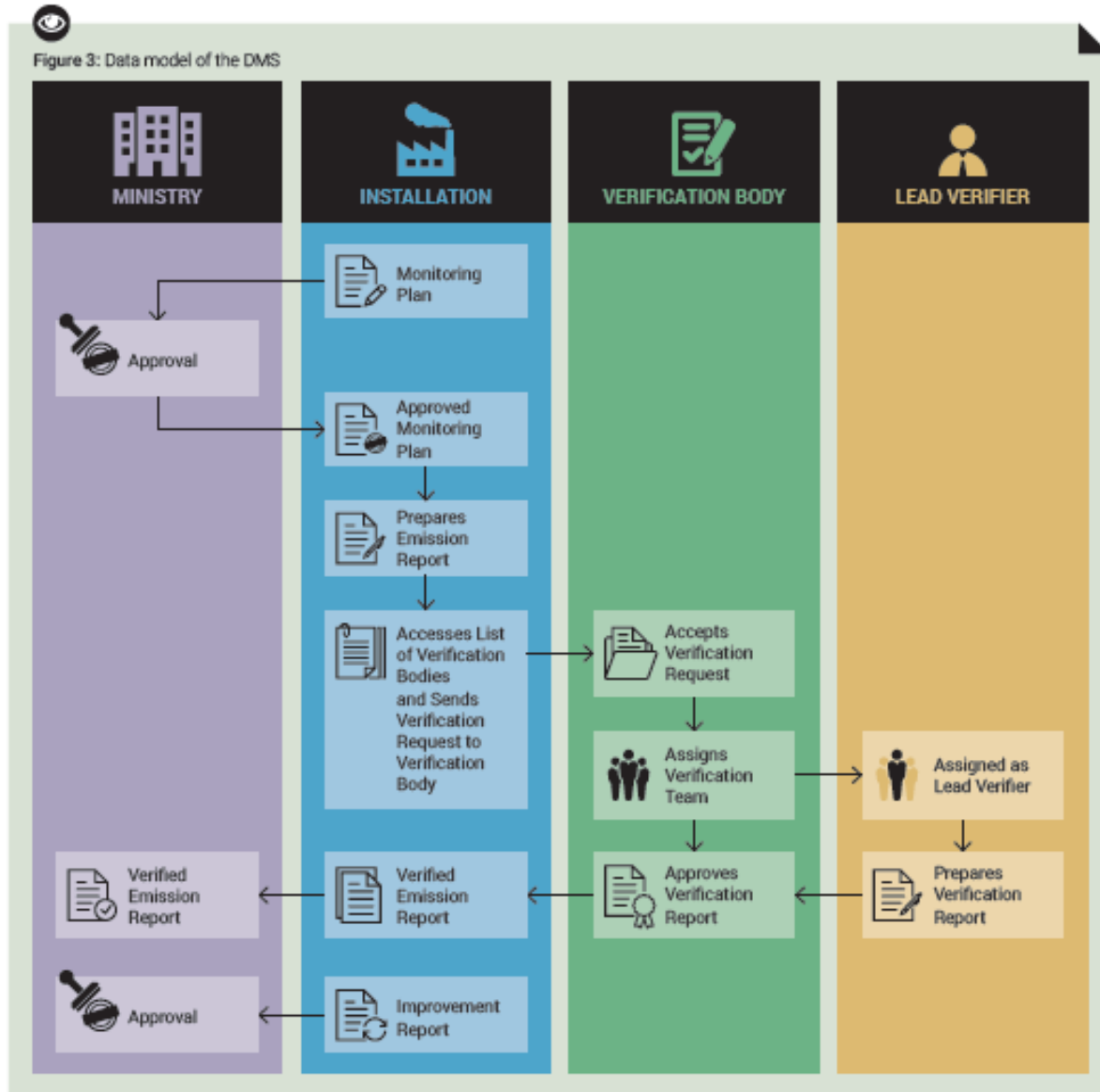
WHY USE AN ONLINE SYSTEM?

▶ Verified emission data is one of the key assets for mitigation policies of climate change.

▶ Having access to the verified emission data provides the opportunities for policy makers to develop more instrumental policies to reduce the emissions.

▶ DMS creates a user-friendly platform where installations can enter emission data through emission reports for verification purposes and where policy makers can access these verified data to develop policies.

▶ DMS provides different statistical queries of the emission data for competent authority from source stream level up to country level.

▶ DMS provides a secure submission portal for all users with QA/QC protocols.

▶ Custom build to fit domestic system!

ROLES AND RESPONSIBILITIES

USER	ROLE
Ministry of Environment and Urbanization	• Approval of the Monitoring Plans (MP) • Regular Checks to submitted Verified Emission Reports (VER) • Approval of the Improvement Reports (IR) • Gathering statistical data • Other tasks – (ie. announcements, invalidating VERs with material , etc.)
Turkish Accreditation Agency (TURKAK)	• Add/Remove Verification Bodies (VB) • Collect information and data during the accreditation process (ie. List of customers, list of verification personnel, dates for site visits, contracts, personnel records, etc.)
Operator	• Prepare and submit MPs • Respond to requests from the Ministry regarding the MPs and VERs • Prepare Annual Emission Reports (AER) • Select a VB • Submit VERs
Verification Body	• Add/Remove Verification Personnel • Prepare and submit the verification report (VR) to the operator • Keep/upload all necessary information and records
Lead Verifier	• Prepare and submit the VR to the verification body

WHAT DOES THE DMS DO?

Figure 3: Data model of the DMS

BUILDING AND IMPLEMENTING THE DMS: CHALLENGES FACED

- The main challenge was to understand how the EU's MRV rules worked. it's a comprehensive and complicated system. Not easy to understand for Ministry staff, operators and verification personnel

- Software development stage was challenging. 2 main issues :
  - implementation of the administrative requirements of the legislation
  - understanding and implementation of the monitoring rules and methodologies

- Software development was an iterative process. During the initial stages of the development some logical mistakes were done (ex. Operators could only had one MP that ERs could be linked to, replaced MPs were deleted from the system)

- Majority of the administrative obligations are monitored through the system – additional burden to its users.

CHALLENGES FACED: BUILDING AND IMPLEMENTING THE DMS

- The use of electronic signatures was a challenge, not every user used to have or had experience using e-signatures. Installation of e-signature software to users' computers were required. this caused some delay (and Turkish e-sig software only runs on Windows). Ministry updated its main gate software to access specific applications. This required additional development budget and time for adoption. But This was a challenge but handled quite well.

- Legislation is a living document. The online system should be able to adapt to the evolving legal texts. Even some changes required major structural changes in the software. This was a challenge but handled quite well.

CHALLENGES FACED: BUILDING AND IMPLEMENTING THE DMS

- It took time for people to get used to the interface and mechanics of the legislation and the DMS. One of the main issues was the selection of the tiers – people did not know about the legislative requirements.

- Bug Reporting interface was introduced to the DMS, many feedback received through this channel.

- Good example : Verifiers were required to provide information on the verification teams - which was non editable - (all personnel and dates of the site visits) during the contract period which certainly changed in the process

ADDRESSING THE CHALLANGES

- The Ministry of Environment and Urbanization mainly relied on two international technical support channels: the Partnership for Market Readiness and Turkish-German Cooperation Project under the International Climate Initiative of the BMU (implemented through GiZ Turkey)

- A Pilot MRV study –

  - Cement Producers, Coal Power Plants and Refineries were selected as pilots.

  - 2 consultancy firms hired, one to develop the MP and prepare a 3 month ER, other one to verify the 3 month ER.

  - Ministry participated the site visits of both stages – very informative and was quite an experience

ADDRESSING THE CHALLANGES

▶ Trainings and study-visits

▶ Many trainings were organized

  ▶ Monitoring and Reporting Trainings for Ministry Personnel

  ▶ Monitoring and Reporting Trainings for Operators

  ▶ Verification trainings for Ministry Personnel (Training of trainers)

  ▶ Use of Online DMS for operators

  ▶ Sector specific process trainings

  ▶ Awareness rising on ETS and MRV for all stakeholders

▶ Study visits

  ▶ Croatia – Fuel oil power plant, lime production, training on verification

  ▶ Germany – Refinery, fuel oil power plant, primary aluminum production, iron and steel cement

▶ All trainings and study visits were very informative!

ADDRESSING THE CHALLANGES

- The Ministry sought consultancy services for :

- software development: It is decided to develop a fit-to-purpose software buying one from the shelf. Benefits:

  - Cheaper

  - Custom build to cover every aspect of the Turkish system

  - Fast and reliable technical support since the developer is Turkish and based in Ankara.

    - Very fast response to reported bugs, much appreciated by the users

    - Some major and many minor modifications were made based on the gained experience and changes to the legislation

- Implementation of EU MRV rules and methodologies – a consultancy company was contracted to work with the software developer to incorporate templated for the MPs, ERs and VRs also the internal check and calculation routines in these Excel forms.

ADRESSING THE CHALLANGES

▶ Guidelines were prepared for the preparation of a MP, ER, sector specific calculation examples, the verification process and user manual for the online DMS.

CHECK ROUTINES

Monitoring Plan and Emission Report

- Total emissions must be the sum of individual emissions from source streams

- Total emissions should be rounded tons

- Automatic emission data calculation by the system using activity data and calculation factors

- All information other than annual data gets automatically inserted to the annual emission report and verification report (information on installation and operator, source streams, calculation factors – other than analysis -, etc.)

- Operator should have an approved MP to be able to generate an annual emission report

CHECK ROUTINES

Verification

- Operator can only select a VB if there is a draft ER present and if the accredited activities of the VB matches the activities present in the related MP

- When the operator requests the VB to prepare a VR, the annual emission report gets locked and can not be changed by the operator or the VB – if any changes are requested by the VB to the ER, the operator revokes the request and only then the ER can be edited.

- After the VR is issued by the VB, ER and the VR can not be changed.

- The VB can only appoint a verification team with the required competencies, otherwise the system will not allow the appointment of the team.

- System also checks the team leader limit, minimum man-day requirements (on site and office), stores information on dates of the site visits fpr each verification team member, all agreements and invoices, etc.

WHAT PEOPLE SAY?

- Overall the DMS is likes and most comments are positive!

- People like the design and ease of use.

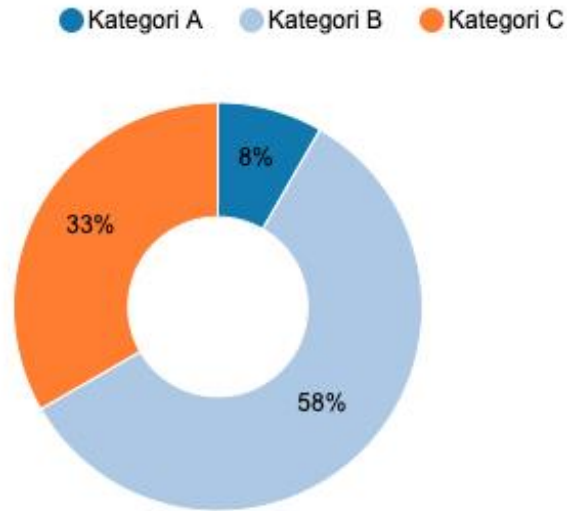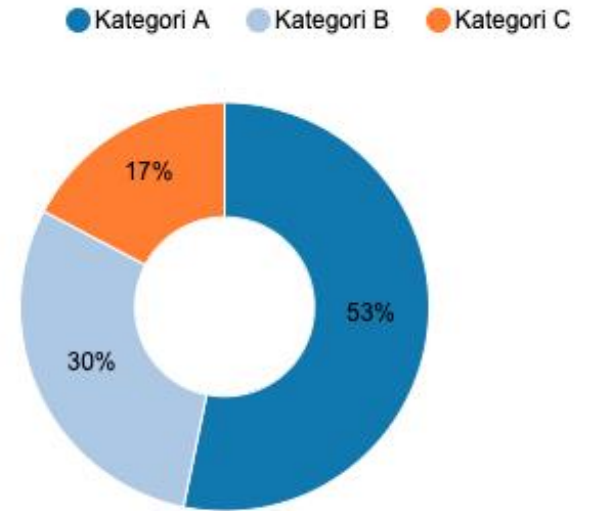- Lots of information needs to be entered or uploaded! – challenge for everyone

SCREENSHOTS

MPs submitted for Approval

Detaylı Liste   ×

Sayfada [10 ▲▼] Kayıt Göster   Sonuçlar içinde ara: [   ]

Tesis Adı ⬍	Plan ID ⬍	Tahmini Toplam Emisyon ⬍	Kategori ⬍	Durum ⬍	Geçerlilik Tarihi ⬍	Son Sunulma Tarihi ⬍	İşlem Tipi ⬍	Son İşlem Tarihi ⬍	⬍
Operator Name	Plan ID	2.115.573,00	C	Bakanlığa Sunulmuş	01.01.2018 - ...	16.08.2019	Onaylanmadı	29.05.2019	İncele
Operator Name	Plan ID	749.791,00	C	Bakanlığa Sunulmuş	01.01.2019 - ...	03.07.2019	-	-	İncele
Operator Name	Plan ID	99.164,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	26.07.2019	-	-	İncele
Operator Name	Plan ID	2.566.438,00	C	Bakanlığa Sunulmuş	01.01.2018 - ...	31.07.2019	-	-	İncele
Operator Name	Plan ID	5.091,00	A	Bakanlığa Sunulmuş	11.06.2019 - ...	15.08.2019	-	-	İncele
Operator Name	Plan ID	405.465,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	08.08.2019	-	-	İncele
Operator Name	Plan ID	233.731,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	08.08.2019	-	-	İncele

MPs submitted for Approval

Detaylı Liste   ×

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Operator Name	Plan ID	99.164,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	26.07.2019	-	-	İncele
Operator Name	Plan ID	2.566.438,00	C	Bakanlığa Sunulmuş	01.01.2018 - ...	31.07.2019	-	-	İncele
Operator Name	Plan ID	5.091,00	A	Bakanlığa Sunulmuş	11.06.2019 - ...	15.08.2019	-	-	İncele
Operator Name	Plan ID	405.465,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	08.08.2019	-	-	İncele
Operator Name	Plan ID	233.731,00	B	Bakanlığa Sunulmuş	01.01.2019 - ...	08.08.2019	-	-	İncele

Approved MPs

Sayfada [10 ⬍] Kayıt Göster

Sonuçlar içinde ara: [ ]

Tesis Adı ⬍		Plan ID ⬍	Tahmini Toplam Emisyon ⬍	Kategori ⬍	Durum ⬍	Geçerlilik Tarihi ⬍	Son Sunulma Tarihi ⬍	İşlem Tipi ⬍	Son İşlem Tarihi ⬍	⬍
Operator Name		Plan ID	19.901,00	A	Onaylanmış	01.01.2018 - ...	18.03.2019	Onaylandı	25.03.2019	İncele
Operator Name		Plan ID	1.712.256,00	C	Onaylanmış	01.01.2018 - ...	20.03.2019	Onaylandı	25.03.2019	İncele
Operator Name		Plan ID	100.451,00	B	Onaylanmış	01.01.2018 - ...	06.05.2019	Onaylandı	06.05.2019	İncele
Operator Name		Plan ID	46.260,00	A	Onaylanmış	01.01.2018 - ...	12.04.2019	Onaylandı	15.04.2019	İncele
Operator Name		Plan ID	14.645,00	A	Onaylanmış	01.01.2015 - ...	11.07.2017	Onaylandı	12.07.2017	İncele
Operator Name		Plan ID	32.596,00	A	Onaylanmış	01.01.2018 - ...	16.04.2019	Onaylandı	18.04.2019	İncele
Operator Name		Plan ID	202.371,00	B	Onaylanmış	10.10.2017 - ...	21.11.2017	Onaylandı	28.11.2017	İncele
Operator Name		Plan ID	1.984.908,00	C	Onaylanmış	01.01.2018 - ...	23.03.2019	Onaylandı	25.03.2019	İncele

Operator Page - Home

Operator Name | İzleme Planları

Genel | Taslak Planlar (0) | Onay Bekleyen Planlar (0) | Onaylanmış Planlar (3) | Askıya Alınmış Planlar (0)

Geçersiz Planlar (3) | Bakanlığa Sunulmuş Raporlar (4) | İade Edilen Raporlar (0)

Tesis Bilgileri

Tesis Adı:	Operator Name
Tesis ID:	Installation ID#
Adres:	Operator Address
İl:	ANKARA
Telefon:	Operator Phone
E-Posta:	Operator E-mail
Web:	
Yetkili:	Responsible Person

Son İşlemler

✓ İzleme planı onaylandı. (İzleme Planı ####)
⏱ 25.03.2019

👁 İzleme planı onay için gönderildi. (İzleme Planı ####)
⏱ 20.03.2019

➕ Taslak izleme planı oluşturuldu. (İzleme Planı ####)
⏱ 19.03.2019

✓ İzleme planı onaylandı. (İzleme Planı ####)
⏱ 16.04.2018

👁 İzleme planı onay için gönderildi. (İzleme Planı ####)
⏱ 14.04.2018

⚠ İzleme planı onaylanmadı. (İzleme Planı ####)
⏱ 13.04.2018

Operator Page – Approved MPs

Operator Name / **İzleme Planları**

Genel	Taslak Planlar **0**	Onay Bekleyen Planlar **0**	Onaylanmış Planlar **3**	Askıya Alınmış Planlar **0**

Geçersiz Planlar **3** Bakanlığa Sunulmuş Raporlar **4** İade Edilen Raporlar **0**

İzleme Planı Numarası	İzleme Aralığı	Durum	Oluşturulma Tarihi		
MP ID#	01.01.2018 - ...	Onaylanmış	19.03.2019	Aç	İzleme Planı Geçmişi
MP ID#	01.01.2017 - 31.12.2017	Onaylanmış	10.04.2018	Aç	İzleme Planı Geçmişi
MP ID#	01.01.2015 - 31.12.2016	Onaylanmış	04.04.2017	Aç	İzleme Planı Geçmişi

Operator Page – Submitted VERs

Operator Name / İzleme Planları

Genel   Taslak Planlar **0**   Onay Bekleyen Planlar **0**   Onaylanmış Planlar **3**   Askıya Alınmış Planlar **0**

Geçersiz Planlar **3**   Bakanlığa Sunulmuş Raporlar **4**   İade Edilen Raporlar **0**

Rapor Numarası	Emisyon Raporu Yılı	Durum	Oluşturulma Tarihi	
Report #	2015	Emisyon Raporu Bakanlığa Gönderildi	24.05.2017	Aç
Report #	2016	Emisyon Raporu Bakanlığa Gönderildi	24.05.2017	Aç
Report #	2017	Emisyon Raporu Bakanlığa Gönderildi	16.04.2018	Aç
Report #	2018	Emisyon Raporu Bakanlığa Gönderildi	26.03.2019	Aç

Notification/Messaging Module

Yönetici Paneli
Bildirim Modülü

Bildirim Gönder

Gönderim Tipi:

🔘 Toplu ⚪ Tekil

Alıcılar:

☐ Tesisler ☐ Doğrulayıcı Kuruluşlar ☐ Baş Doğrulayıcılar

Konu:

İçerik:

Verification Module – Home Page

Genel

Doğrulayıcı Kuruluşlar

Doğrulama Personeli

Doğrulama Sürecindeki Raporlar

Doğrulanmış Raporlar

DK Yıllık Raporlar

Vergi Numarası	Ekle

Sayfada **10** Kayıt Göster

Sonuçlar içinde ara:

Doğrulayıcı Kuruluş	Vergi No	Yetki Durumu	Yetki Bitiş Tarihi	
ALİŞAN BALKOCA	54082236932	Pasif	07.07.2017	Detay
AURA ULUSLARARASI BELGELENDİRME EĞT.DEN.VE MUAY.HİZ.LTD.ŞTİ.	1030540285	Aktif	30.11.2020	Detay
AVRASYA SERA GAZI DOĞRULAYICI KURULUŞ MÜHENDİSLİK ANONİMŞİRKETİ	1050612396	Aktif	06.02.2021	Detay
BSI GROUP EURASIA BELGELENDİRME HİZMETLERİ LİMİTED ŞİRKETİ	1870282052	Aktif	26.12.2020	Detay
BUREAU VERİTAS GÖZETİM HİZMETLERİ LTD.ŞTİ.	1910006484	Aktif	28.12.2020	Detay
CPC BELGELENDİRME MUAYENE VE DENEY HİZMETLERİ TİCARET LİMİTED ŞİRKETİ	2150246239	Aktif	28.12.2020	Detay
INSPECCO BELGELENDİRME VE GÖZETİM HİZMETLERİ ANONİM ŞİRKETİ	4650493199	Pasif	01.01.2019	Detay
İNTERTEK TEST HİZMETLERİ A.Ş.	4650042498	Pasif	05.01.2021	Detay
ORCA BELGELENDİRME VE GÖZETİM HİZMETLERİ LİMİTED ŞİRKETİ	6450367392	Pasif	09.10.2018	Detay

Verification Module – Verification Body Details Page

Thank you for your attention.

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