

# 2<sup>ND</sup> WEBINAR/ TOOL TRAINING FOR STAKEHOLDERS

---

Store4HUC\_D.C.6.6 and D.C.6.1

Version 1

Date

01/03/2022

---



Title	Documentation on the 2nd webinar and on the tool training for stakeholders
Deliverable	D.C.6.6 and D.C.6.1
Authors	Paula Krichbaum
Contributors	Wolfgang Hofstetter
Status	First Version
Reviewed by	Katja Karba
Submission	

# Content

- 1. Summary ..... 4
- 2. Date and place ..... 4
- 3. Number and types of participants/target groups ..... 4
- 4. Topics tackled and links to deliverables, outputs..... 4
- 5. Expected effects and follow up ..... 5
- 6. Annexes..... 7
  - 6.1. Invitation and Agenda..... 7
  - 6.2. List of participants..... 10
  - 6.3. Pictures ..... 12
  - 6.4. Media coverage ..... 14
  - 6.5. Web-links ..... 14

# 1. Summary

As the project is almost finalized, the Second Webinar was used to share the results with interested people. While the first Webinar concentrated on the results of the pilot projects, the Second Webinar focused on the software tools which were developed within the project. One important goal of the webinar was to train stakeholders how to use the tools.

At the beginning Katja Karba of the development agency Sinergija introduced the goals and outputs of the project. Furthermore, she presented thematic and communicational results such as the energy savings of the pilot project and the number of participants involved in project events.

Afterwards Robert Pratter (4ward Energy research) introduced the Autarky Rate Tool, which can be used without expertise. The tool evaluates the technical, economic and ecological impacts of different producer and storage constellations. The speaker explained all relevant measurements, which must be included by the users. Moreover, he demonstrated how the tool is used and he described the outputs, given by the tool.

Subsequently Filip Rukavina (University Zagreb) presented the Optimal Sizing Calculator and the Optimal Heat Source Scheduler. He explained the ideas of the tools. The Optimal Sizing Calculator calculates the optimal sizes of photovoltaic plants and battery storage systems while the Optimal Heat Source Scheduler can be used to identify the optimal schedule of the heat source when thermal energy storages are used. In addition to that he explained the different features of the tools and demonstrated how the tools can be used. For those two tools more knowledge is necessary.

At the end of the event representatives of the four pilot projects presented their results. Andrea Dornhofer (Energy and Innovation Centre Weiz) presented the Weizberg Church, which received a central thermal energy storage tank in connection with decentralized hot water storage tanks in order to increase the energy efficiency. Martina Krizmanić Pećnik (North- West Croatia Energy Agency) introduced the Manor Bračak, where photovoltaic plants and a storage system were implemented. Subsequently Elisa Marino (City of Cuneo) demonstrated how the sloping elevator was improved by adding photovoltaic plants along the runway of the elevator. Štefan Žohar (Development agency Sinergija) presented the implementation of paraffin bases latent storages in connection with geothermal district heating system at a listed building in Lendava. Moreover, the challenges and measures were shown. It was stressed that the monitoring process is still in progress while all investments are finalized.

## 2. Date and place

The webinar took place online on the 1<sup>st</sup> of March, 2022 via Zoom.

## 3. Number and types of participants/target groups

The total number of webinar registrants was 48, 34 of them attended the webinar.

All registered participants received the presentation as information material.

## 4. Topics tackled and links to deliverables, outputs

Since D.C.6.6 and D.C.6.1 have quite similar objectives, they are combined in one report. The aim of the event was to show participants and stakeholders how to use the tools.

At the beginning Katja Karba introduced the objectives of the project. All of them have been achieved.

Tools and a transnational strategy for the implementation and capitalisation of energy storages have been developed and adopted by external organisations and institutions.

Furthermore, the pilot activities, which have been carried out, demonstrate the establishment of energy and thermal storages. All pilot projects have been finalized and the energy efficiency could be increased.

Moreover, workshops, trainings for trainers and Webinars were organized.

Other topics were the presentation of the software tools and of the pilot projects.

It was explained and demonstrated how the different tools can be used. Thus, the tools can help external users and organisations to enhance their energy efficiency by using renewable energy resources and storage systems. In addition to the tools the exact results of the pilot activities were shown.

## 5. Expected effects and follow up

Since the pilot projects were the main topic at the First Webinar, the Second Webinar focused on the three software tools. Each of them allows their users to increase their energy efficiency as well as their energy independence. Moreover, users can reduce their carbon dioxide emissions and their energy usage. The event helped to make the tools known to the public. Hence, more homeowners, organisations and institutions will use the tools. In a long-term perspective the tools help to increase the usage of renewable energy resources and storage systems. Accordingly, they contribute to the energy transition.

The satisfactory results of the pilot project can have an exemplary function.

Consequently, other cities can be inspired to improve their listed buildings as well.

Before the project ends the final project conference (D.C.6.3), where the tools and the results of the project can be promoted, will take place.

## 6. Discussion

After every agenda item there was the opportunity to ask questions about a certain presentation.

At the end of the event questions could be asked about all the presentation. Most questions concerned the future of the project. Since the project ends this month (March 2022), it is interesting to know how the results, achieved within this project, will be used after the finalization of Store4HUC.

It was asked, whether the tools presented could be updated. Robert Pratter and Filip Rukavina answered that they had some ideas how to do that. The Autarky Rate Tool could be updated by including an advanced mode, where users have the possibility to include their own profiles. A concern of participants was also that the energy price, which is a needed feature for the tools, can change severely. But the speakers could confirm that the tools will be updated frequently. The tool could also be improved by adding the possibility for users to use their own energy prices instead of the average price.

There were also questions about the positive effects and the transferability of the pilot project.

It was asked, whether the pilot intervention in Italy would influence future policies of the project. Andrea Dornhofer stated that the positive effects include lower heat losses, especially during the



summer. Moreover, the efficiency and the lifetime of the plant are increased. The Croatian representative Martina Krizmanić Pećnik explained that the pilot serves as a good practice example and therefore promotes the use of renewable energy resources at historical urban centres.

Through the project the staff gained more knowledge for future renovations.

Elisa Marino from the city of Cuneo explained that the pilot proves the importance of implementing renewable energy resources. Through the project the general awareness for the energy topic is higher and the city is encouraged to become even more sustainable, by implementing projects in other areas of the town. Since the usage of renewable energy and storage system were tested on a small scale, it might help to use the systems for other buildings and transportation.



## 7. Annexes

### 7.1. Invitation



#### **EINLADUNG ZUM STORE4HUC WEBINAR**

##### **Store4HUC - Webinar - Vorstellung unserer Energiespeicher Management-Tools**

**Zeit: 1. März, 10 - 11 Uhr**

Am 1. März 2022 möchten wir Sie zum zweiten Store4HUC-Webinar einladen, das erneut online stattfinden wird. Nach dem ersten Webinar, in dem wir über unsere 4 Pilotstandorte gesprochen haben, werden wir uns nun auf die drei Tools konzentrieren, die im Rahmen des Projekts entwickelt wurden. Diese Tools sind das Autarkie-Tool, der Optimal Sizing Calculator und der Optimal Heat Source Scheduler.

Das Autarky Rate Tool ist ein einfach zu bedienendes Online-Tool, das Sie mittels eines Webbrowsers öffnen können. Mit ihm können Hausbesitzer herausfinden, welche Art von Investition in ein PV- und Batteriesystem für ihren Haushalt und ihr Energieverhaltensverhalten sinnvoll ist.

Der Optimal Sizing Calculator und der Optimal Heat Source Scheduler sind für erfahrene Anwender gedacht. Beide benötigen einen erfahrenen Anwender und etwas Rechenleistung, können aber präzise Ergebnisse liefern. Der Optimal Sizing Calculator liefert Ihnen die optimale Dimensionierung des PV- und Batteriesystems für den Energiebedarf Ihres Hauses.. Der Optimal Heat Source Scheduler berechnet einen optimalen Heizungsplan bei mehreren Wärmequellen und einem Speichersystem.

Datum und Uhrzeit: 01.03.2022 - 10:00 - Zoom

Registrieren Sie sich hier:

<https://www.interreg-central.eu/Content.Node/news/2nd-Webinar-Presenting-the-Tools.html>

**STORE4HUC - ENERGY STORAGES AT HISTORICAL URBAN CENTRES**



## INVITATION TO STORE4HUC WEBINAR

### Store4HUC - Webinar – Presenting our Energy Storage Management Tools

**Time: 10 - 11 a.m. on March 1st**

Coming up on the **1st of March 2022** we like to invite you to the **second Store4HUC webinar**, which will take place online once again. Following the first one, where we have talked about our 4 pilot sites, we will now focus on the three Tools which were created in the project. Those Tools are the Autarky Rate Tool, The Optimal Sizing Calculator and the Optimal Heat Source Scheduler.

The **Autarky Rate Tool** is an easy to use online tool, which you can open on a web browser, with it homeowners can figure out what kind of investment in a PV and Battery system makes sense for his household and energy usage patterns.

The **Optimal Sizing Calculator** and the **Optimal Heat Source Scheduler** are for the expert users, both need an experienced user and some computing power, but are able to produce precise results. The Optimal Sizing Calculator delivers to you the optimal dimensions of PV and Battery system fitting your homes energy demand patterns. The Optimal Heat Source Scheduler calculates an optimal heating schedule for multiple heat sources and a storage system.

Date and Time: 01.03.2022 – 10:00 – Zoom

**Register here:**

<https://www.interreg-central.eu/Content.Node/news/2nd-Webinar-Presenting-the-Tools.html>

STORE4HUC - ENERGY STORAGES AT HISTORICAL URBAN  
CENTRES





## 7.2. Agenda

Time	Subject	Speaker
10:00 – 10:05	Opening Words	Katja Karba
10:05 – 10:20	Autarky Rate Tool	Robert Pratter
10:20 – 10:35	Optimal Sizing Calculator	Filip Rukavina
10:35 – 10:50	Optimal Heat Source Scheduler	Filip Rukavina
10:50 – 11:15	Pilot actions results	Andrea Dornhofer, Miljenko Jagarčec, Elisa Marino, Štefan Žohar
11:15 – 11:30	Q&A	

## Agenda

- 10:00- 10:05 Welcome and Opening words  
[Katja Karba, Development agency Sinergija]
- 10:05- 10:25 Autarky Rate Tool  
[Robert Pratter, 4ward Energy Research Ltd.]
- 10:25- 10:45 Optimal Sizing Calculator  
[Filip Rukavina, University of Zagreb]
- 10:45- 11:05 Optimal Heat Source Scheduler  
[Filip Rukavina, University of Zagreb]





## Agenda

11:05- 11:30 Pilot action results

[Andrea Dornhofer, Energy and Innovation Centre of Weiz]

[Martina Krizmanić Pećnik, North- West Croatia Energy Agency]

[Elisa Marino, City of Cuneo]

[Štefan Žohar, Development agency Sinergija]

Questions and Answers

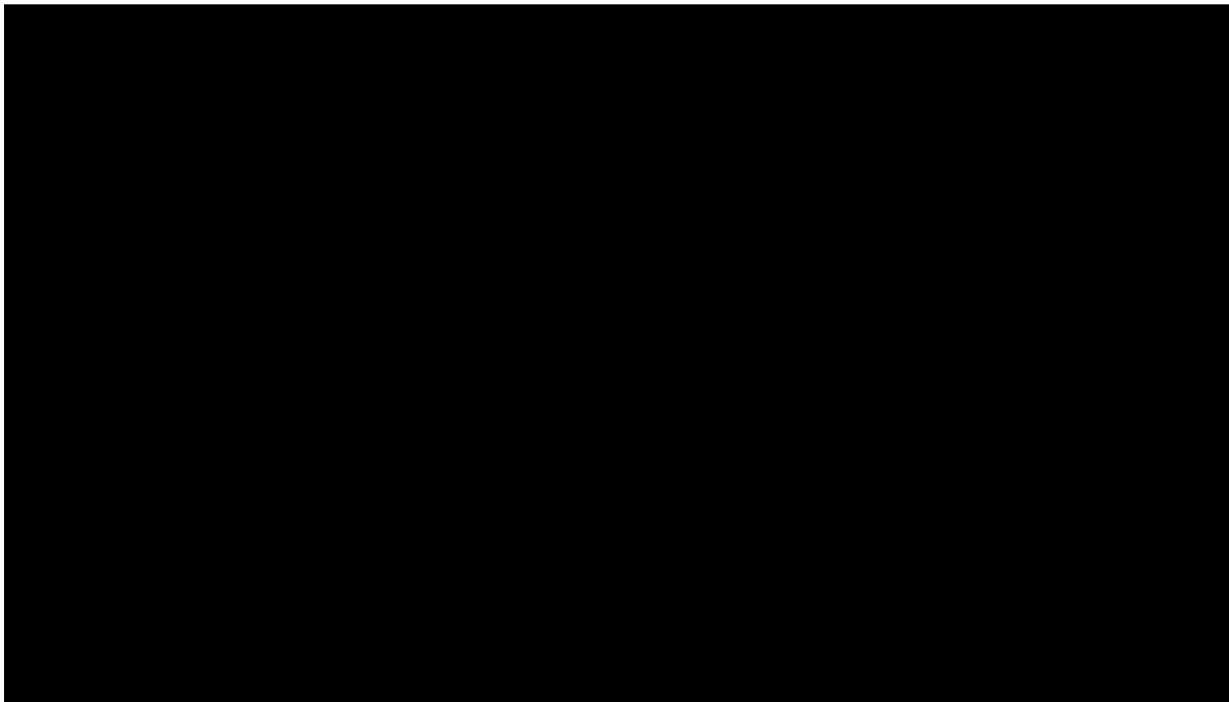


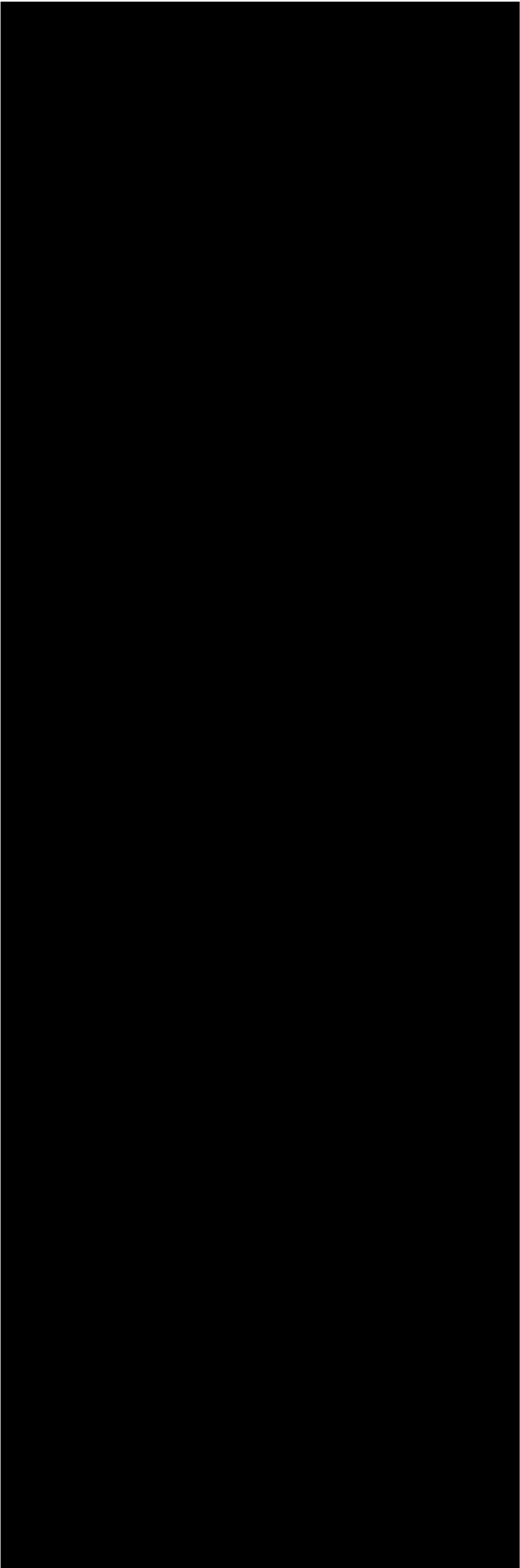
TAKING COOPERATION FORWARD

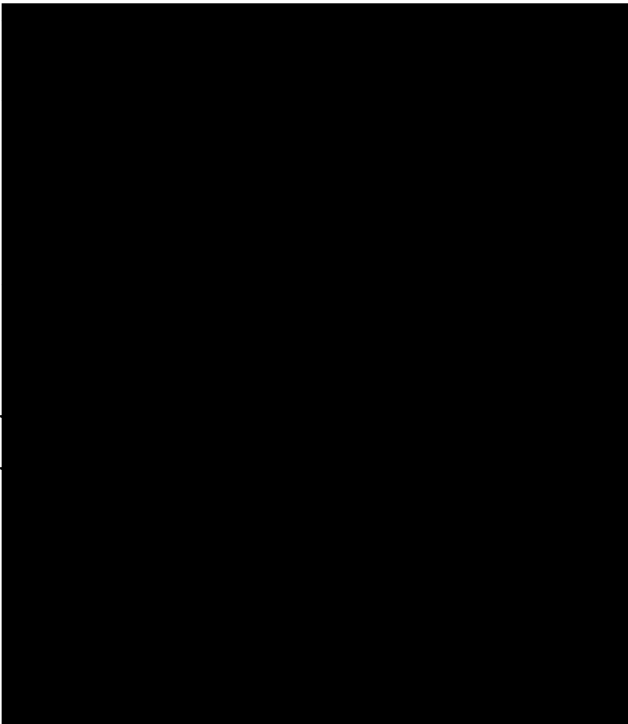
3



### 7.3. List of participants







## 7.4. Pictures

Zoom Meeting

Sie sehen den Bildschirm von Filip Rukavina Ansicht Optionen

Axel Veitengrub...  
 Axel Veitengrubel | C...  
 Kaja Karba  
 Filip Rukavina  
 Robert Pratter  
 Robert Pratter  
 Wolfgang Hofst...  
 Wolfgang Hofstetter  
 Municipality of...  
 Municipality of Beltinci (SI)

Aufnahme  
 Optimal sizing calculator.xlsx  
 Filip Rukavina

Statistik Polster Umfrage Rastered (Richt... Formate Fodad Regled Privaz Programiranje Pomoc  
 Automatische sprecher...  
 Kommentar...  
 Zupredloza konfiranje

CALCULATOR FOR OPTIMAL SIZING OF A PV SYSTEM AND A BATTERY STORAGE SYSTEM		
<b>BASIC PARAMETERS</b>		
10 Country	Austria	
11 Consumer type	Family household two children	
12 Peak power billing	No	
13 Yearly consumption	6000 kWh	
14 Maximal pay-off period	15 years	
15 Maximal possible investment	25000 €	
16 Optimality criterion		
<b>BATTERY STORAGE PARAMETERS</b>		
19 Number of cycles	2000	
20 Depth of discharge (DoD)	0.8	
21 Charging efficiency	0.9	
22 Discharging efficiency	0.9	
23 Lifetime of power converter	25 years	
24 Price of new battery pack	770 €/kWh	
25 Price of new power converter	660 €/kW	
<b>PV SYSTEM PARAMETERS</b>		
28 Max. possible peak power	5 kWp	
29 Orientation	South	
30 Inclination	30°	
31 Lifetime of PV system	25 years	
32 Price of PV system	1200 €/kWp	
33		

Audio ein Video starten Sicherheit Teilnehmer Chat Bildschirm freigeben Aufnehmen Breakout Session Reaktionen Verlassen

10:33  
01.03.2022

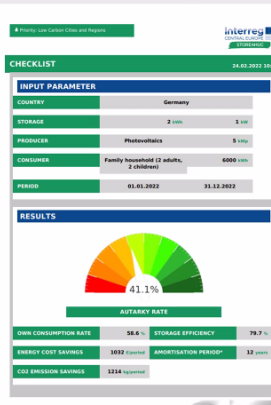


Zoom Meeting

Aufnahme

### Checklist

- Pdf-Dokument
- Save the calculation
- Explanation of the results
- Advices on implementing storages in HUC



**Interreg CENTRAL EUROPE STORE4HUC**

4 Priority: Low Carbon Cities and Regions

**CHECKLIST** 24.03.2022 10:40

**INPUT PARAMETER**

COUNTRY	Germany
STORAGE	2 kWh
PROSUMER	Photovoltaics
CONSUMER	Family household (2 adults, 2 children)
PERIOD	01.01.2022 31.12.2022

**RESULTS**

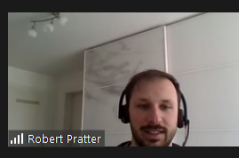
41.1% **AUTARKY RATE**

58.6% **OWN CONSUMPTION RATIO** | 79.7% **STORAGE EFFICIENCY**

1092 **ENERGY COST SAVINGS** | 13 **AMORTISATION PERIOD**

1218 **CO2 EMISSION SAVINGS**

TAKING COOPERATION FORWARD 13



Robert Pratter

Zur Suche Text hier eingeben

10:20 01.03.2022

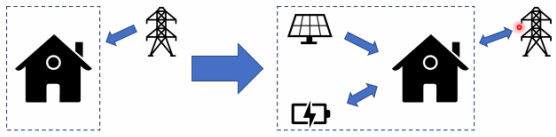
Aufnahme

Sie sehen den Bildschirm von Filip Rukavina

Ansicht Optionen

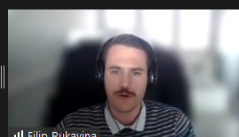
### IDEA

- Increase energy from RES → adding photovoltaic (PV) system
- Unfavorable feed-in prices, increasing flexibility → adding battery energy storage system (BESS)



- Calculation of optimal sizes of PV + BESS:
  - battery capacity [kWh]
  - power converter size [kW]
  - power of PV system at STC [kWp]
- Calculation based on yearly consumption profile

TAKING COOPERATION FORWARD 3



Filip Rukavina

Audio ein Video starten Sicherheit Teilnehmer 33 Umfragen Chat Bildschirm freigeben Aufnehmen Untertitel Breakout Session Reaktionen Beenden



## 7.5. Media coverage

[https://www.facebook.com/store4huc/posts/2017875301724142?\\_\\_cft\\_\\_\[0\]=AZVsB35HOZZUght3Rz-hMcGP3157090rzRd1VS-u4AlHyROpiqs9BBE5sd3WAEvBl6AaenlAqvUXFcGeWsD\\_do1UuaXTUN41Yl\\_UOoynnpjNSmAck-f-MDM8l4kcbXCyQBKbM2w7aeUmmXZwpzkcZ9JVC\\_h84skWZjb4V7Y0Ddpkqma1ZZENeYqVeLnwwvhDs&\\_\\_tn\\_\\_=%2C0%2CP-R](https://www.facebook.com/store4huc/posts/2017875301724142?__cft__[0]=AZVsB35HOZZUght3Rz-hMcGP3157090rzRd1VS-u4AlHyROpiqs9BBE5sd3WAEvBl6AaenlAqvUXFcGeWsD_do1UuaXTUN41Yl_UOoynnpjNSmAck-f-MDM8l4kcbXCyQBKbM2w7aeUmmXZwpzkcZ9JVC_h84skWZjb4V7Y0Ddpkqma1ZZENeYqVeLnwwvhDs&__tn__=%2C0%2CP-R)

<https://www.linkedin.com/feed/update/urn:li:activity:6897860038585675776>

## 7.6. Web-links

<https://www.klimabuendnis.org/events/events/events-detail/instrumente-fuer-das-energiemanagement-im-ueberblick.html>

<https://archive.newsletter2go.com/?n2g=ka648rqf-niwg5br4-65y>

<https://www.climatealliance.org/events/events/events-detail/energy-management-tools-at-a-glance.html>

<https://archive.newsletter2go.com/?n2g=ka648rqf-kwvxbjqb-y2f>